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THE VILLAGE STREET WHERE IT BORDERS THE BROOK

Art and Architectural Artifice

By JEROME LACHENBRUCH

Illustrated by Photographs of Scenes in Goldwyn Pictures Corporation's Reproduction of "Bunty Pulls the Strings," Under the Art Supervision of Cedric Gibbons

WHO that has read Burns' "The Cotter's Saturday Night," or Barrie's "A Window in Thrums," has not felt a thrill of delight and made a mental resolve some day to visit the scenes that the music of the Scotchmen's poetry and prose conjured up? We feel the contentment of the old villager or see the life of the town as it unfolds through the magic of words. Yet to us in America, the pictures suggested persist as the product of our imaginations, and differ with the quality of our individual fancies.

We know that the solid homes of the Scotch villagers are a slow growth, the expression of the group reactions of a people to their environment. And for the purposes they serve, they seem to be a complete external manifestation of a physical and a spiritual necessity. Why should their homes take the peculiar form they do? It is not that other materials cannot be obtained, or that money is lacking. With personal views of their relation to their environment, the expression of them has assumed a peculiar and original form. The result is a native art in building.

Definitions of art are more often misleading than informative. In a general way, art may be called the expression, in some form, of an emotion intensely experienced. And the great artist is he who feels in-

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tensely and expresses his emotions completely. A unity, then, between the power to feel and the ability to express, results in an artistic creation. But a work of art is not necessarily the expression of one man's emotions or the fashioning of one man's hands. Emotion ranges wider fields than one man's breast. For there is the community, the shared and unified emotions of a people, which produce works of art that have a group significance. Indeed, so true have these communities been to their group expressions of themselves, that we, in a newer and more robust land, and with a different environment, still hark back to them for a suggestion of that which we feel lacking in ourselves.

Is it that we appreciate the love and the sincerity with which their homes were built, their villages grew? Are we slowly recognizing that where our homes and churches and taverns are the sudden flowerings of immediate and impatient demands, theirs is the mellow and accumulated fruit of a slow growth, a growth that has had time for reflection, introspection, questioning, for an examination of those principles in building which will best express the continuity of life and the immortality of soul that they feel?

Our appreciation of their attitude has led us to imitate them. And yet, though our houses may be built of hollow tile on rock foundations, while theirs represent laborious hand work with mud and stone and thatch, there is a feeling of permanency about the Scotch cotter's hut that rarely moves one in contemplating the massive Fifth Avenue mansion of an American millionaire.

AMERICA has broken the back of nature to make her do its architectural bidding. We have levelled hills to satisfy the wishes of a successful, adopted son, or built up terraces because his fancy held a memory of some ancestral, Old World home. How differently his ancestor built his cot!

"Ah, there's a pretty, rolling bit of ground. I guess I'll build my house upon it."

And so, the ancestor built a stone wall following the curve of the land; and on a knoll, erected his home. Then he had a natural terrace. His was no conflict with nature. He took her as she was, worked with her and made the best of her, accommodated his necessities to her preempted rights in the soil; and the result has been a thing of beauty that we send our architects abroad to study.

We call these homes examples of native art; and in modified form, try to reproduce their lines in

A FAITHFUL AND ARTISTIC REPRODUCTION OF A SCOTTISH MOTIVE

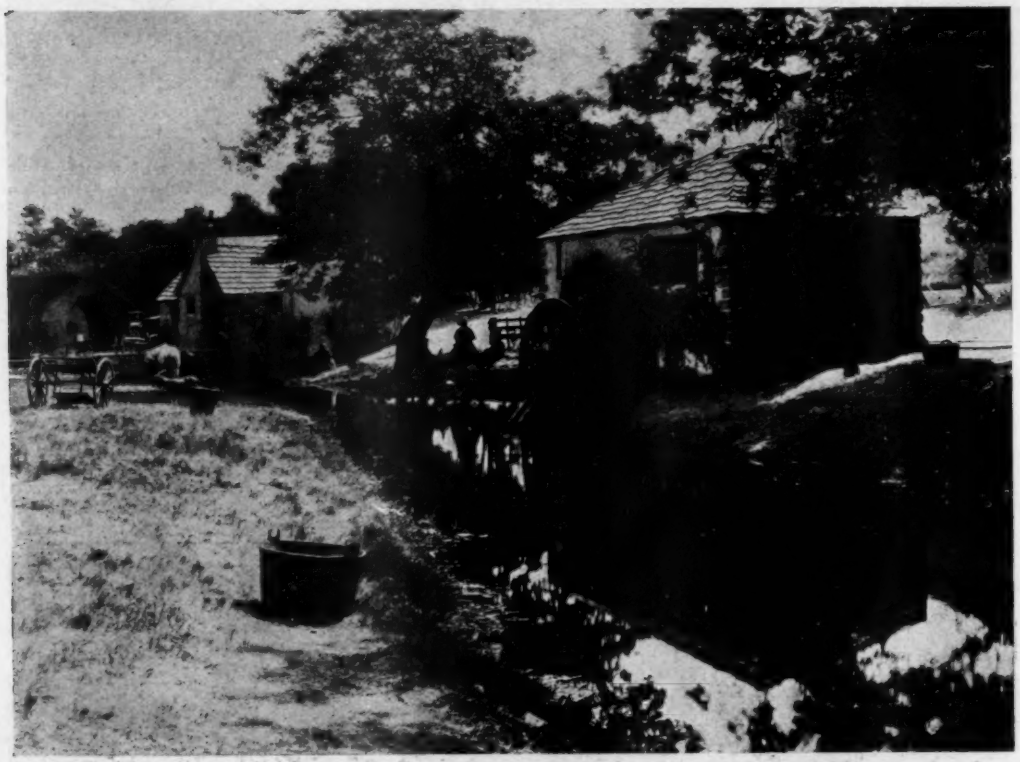
SHOWING THE SKILLFUL ADAPTATION OF A LOCATION, THOUSANDS OF MILES AWAY, TO THE NECESSITIES OF A SCENARIO PRODUCED IN THIS COUNTRY

THE ATMOSPHERE OF AN "OLD WORLD" RUSTIC SCENE PRESERVED IN ALL ITS DETAILS BY THE CAREFUL STUDY OF THE DIRECTOR

some of our buildings. In some measure, America has succeeded in transplanting the artistic building ideas of the Old World to the New. But there is something heartbreaking about it. For, when a mansion, constructed on some foreign model, becomes forty or fifty years old, it is seen that the structure hasn't maintained its original correspondence with the soil in which it was planted. Its environment, which may have been made over to fit it, has changed completely; and what may formerly have been an approximately accurate imitation, has become an incongruity.

As a building nation, America has not had time enough to assimilate completely its indigenous architectural ideas. We imitate too closely, and discover that the imitation does not quite fit the new, spreading surroundings. And we have been imitating, perhaps, because we have feared to take what we have and to work with that material in utter sincerity. We know that our European models are honest expressions of deep felt purposes; and in using them, we know we shall not be laughed at, for they have stood the test of time. It may be argued that all our architectural ideas lead in direct descent to the Old World; that blood and a transplanted (and consequently, a transformed), culture would preclude the development of a distinct Americanism in architectural design.

With this in mind, it must be agreed that adaptation, rather than imitation, should be the foundation of our building art. The basis of my quarrel with American architecture is not that we have not adapted sufficiently, but that we have not always done so with artistic intelligence. Perhaps we have not studied our models with the care and the sympathetic understanding that comes from within, an understanding that cannot be expressed in terms of linear feet and building material.



A PICTURESQUE "LOCATION" THAT OFFERS A FINE OPPORTUNITY TO THE LANDSCAPE PAINTER

There is hope, though, that our models will be brought to us in a new way; and that instead of depending upon the visits abroad of a few chosen teachers to tell us through the medium of their particular reactions, how we should adapt Old World ideas, we may all see the originals if we have but the desire to do so. But the broad source from which we may derive a new inspiration deals very indi-

THE "AULD KIRK"

rectly with architecture and with building. I refer to the modern, carefully produced, motion picture. The most genuine contribution to art that may be laid to the motion picture lies in its architectural gifts. In this single phase of the industry, more care and ingenuity have been lavished than upon any other. Artists, architects, draughtsmen, are employed to study and to plan settings from original sources with an honest view to the maintenance of a definite verisimilitude with the locale in which a story unwinds its episodes. Many of the men directly concerned in this work have travelled far and wide; and their knowledge finds free expression in the stone and wood structures against which the celluloid tragedies and comedies are contrasted.

THE attempt to achieve on the screen a truthful representation of the original has not always succeeded. But more knowledge is continually flowing to the screen, better artists, men whose understanding is international; and consequently, we are sometimes startled to find ourselves in a little French village, or on the road that leads to the kirk in a Scotch town.

Here, in the motion picture at its best, we may find a sincerity in the spirit of the reproduction, and a verisimilitude with the original that cannot fail to stimulate our architectural interests. We may grant the artifice behind the motion picture; but this architectural artifice has, nevertheless, resulted in a close approach to art.

The accompanying photographs speak for themselves. To obtain them, the Goldwyn Pictures Corporation built an exact replica of a Scotch village in which the photoplay, "Bunty Pulls the String," was enacted for the screen. When the Graham Moffet photoplay was made, the director, Reginald Barker, insisted that every scene be faithfully reproduced. He himself was educated in Scotland; and as a result of his feeling for the artistic proprieties, Cedric Gibbons and Julian Garnsey, construction manager, were given complete freedom in laying out a little village on a plot of ground acquired for this purpose alone. The village in which the action of the story takes place, consists of a stone church, the Robert Burns tavern, and about ten houses. A little stream runs through the town, which is about five blocks long. To add to the fidelity of the picture, rose vines were transplanted from the hot houses of the Goldwyn studios and trained against the wall of the thatched roofed cottages. A few cows were brought to graze along the stream; a dozen ducks found a new home in it; and a stray goat edged his way into the landscape.

So successful was this architectural background for the picture, that the Goldwyn Company has leased the ground for a year, and has invited the public to visit its exhibition of the little Scotch village. The old stone kirk is solidly built; and the homes of the cotters have thatches eighteen inches thick, just as they are in Scotland. But it has not been necessary to hold the thatches down with rocks

THE MODERN MOVING PICTURE "SET" IS AS STRUCTURAL IN ITS PRODUCTION AS A PRACTICAL BUILDING

as is done in the Highlands. California winds are not so tempestuous. Yet, on the screen, the effect of the reproduction is quite as alluring as a visit to some of the villages in Scotland. And what is more, every detail of costume has been thought out so that the players appear in ancient shawls, knitted mitts and strange looking top hats.

One does not have to journey to California to see this unusual bit of Scotland. Its pictorial lesson will be shipped all over the United States on an unromantic strip of celluloid. And then, the white heat of carbon lamps in motion picture machines will once more bring to life on the screen a glorious and instructive illusion.

THE PRINCIPAL "SETTING" IN "BUNTY PULLS THE STRINGS"

What Is Art?

WE reprint with considerable satisfaction two letters addressed to the Editors of *Engineering News-Record* in further discussion of the question as to what really constitutes art in the practice of both architecture and engineering. It is certain that these well expressed and correctly stated communications more accurately outline the opinion of the large majority of engineers as to the correct interprofessional relation than did the sentiments of a former correspondent, to which allusion was made in our issue of October 20.

The letters are as follows:

Sir—It seems to the writer that your editorial "What is Art," *Engineering News-Record*, Sept. 16, 1920, p. 531, and Messrs. Trautwine's and Hering's comments thereon do scant justice to architects.

To select some examples of exceedingly poor taste in design, and to judge artists and architects as a class thereby is hardly sportsmanlike. The several horrible examples of sham and gingerbread work cited, proved merely that although a man may sign himself architect and actually practice that profession, he is not really one unless properly trained for his work. No one would judge physicians as a class by the malpractice of some "quacks" who hold medical licenses.

Occasionally an engineer designs a bridge or other structure that has beautiful lines and proportions, as, for example, the Brooklyn Bridge, but more often we get the usual homely type of highway or railroad bridge so common everywhere. They are generally well designed and, to quote Mr. Hering, will give "The required resistance to every attacking force with the least amount of material, and in the simplest and most direct way." But they are hardly things of beauty except when judged by the rule of "handsome is as handsome does."

In France where engineers are second to none in design, an architect is always associated on important bridge work, and nowhere else in the world are these structures so beautiful as a rule. An architect of real standing was selected to assist in the design of all the large bridges built in recent years at New York. It

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Architectural Quicksands

By CLINTON H. BLAKE, JR.

Dealings With Corporations

SO large a proportion of the business of today is carried on by corporations, that a word of caution is in order with regard to the making of contracts with business and municipal corporations or other governmental agencies. The modern business corporation is managed by its directors. The policies of the directors are put into effect and carried out by the officers but, in the last analysis, it is the directors or stockholders who must pass upon matters involving corporate obligations, if the corporation is to be bound thereby. Where a contract is to be made with the corporation, whether the other party to the agreement be the architect or the owner or the contractor, he should, if the contract involves a substantial amount, satisfy himself that the officers executing the contract in behalf of the corporation are duly authorized to do so. It is not necessarily a question of any bad faith on the part of the officers. It may be, that they will execute a contract, believing firmly that their powers are broad enough to give them the right to do so, and it may develop later that they have been erroneous in this belief and that the execution of the contract was beyond the authority vested in them.

In many instances of this kind, the party making the contract with the corporation has had the unpleasant experience of suddenly being told by the corporation that the agreement made with him was not binding upon the company, because it had not been properly authorized by the directors in the first instance, and that the company refused to recognize its liability and repudiated any obligations under the contract. To prevent such a development, if there be any doubt whatever, the corporation should be asked to deliver, at the time the contract is delivered, a copy of a resolution of its Board of Directors or, in special cases where that may be necessary its stockholders, authorizing the execution of the contract. This copy should be certified by the secretary of the corporation, and his certificate should state, in substance, that the copy so certified is a true copy of a resolution adopted at a duly held meeting of the directors or stockholders, that it is executed by the officers of the corporation, that they were officers duly acting in behalf of the corporation and under its authority at the time the certificate was issued, and that they executed it pursuant to the authority vested in them by the resolution. Ne elaborate resolution or certificate is necessary, provided the foregoing is covered in substance. It will be readily seen, that a resolution and certificate in this form will, in a large part, obviate the danger of a repudiation or attempted repudiation of the contract by the corporation at a later date, and assure the other party to the contract that the corporation is bound by the agreement entered into in its name.

In the case of municipal corporations, and in dealings with state or national governments, the matter becomes of considerably more importance, and it may be safely taken as a general rule that, in all such cases, special care should be taken to see that all required formalities are complied with in the execution of the contract. During the war, for instance, various bureaus of the War Department, in purchasing materials, advertised for bids on stated materials and quantities. On receipt of bids the successful bidder was advised that his bid was accepted. Not only this, but he was sent a copy of a so-called "order," stating that the order for the materials, in accordance with his bid, was placed with him. Anyone not initiated in the intricacies of government purchases, and the operation of the machinery whereby they are made, would naturally suppose that, when a bid is called for, submitting in writing, accepted in writing, and a written order for the material placed, the transaction would amount to a contract binding upon both parties. The fact is, that, while the contractor might be bound, the government, unless it had actually received the materials covered by the order, would not in the ordinary case be bound by the order, unless, in addition to the foregoing formalities and the written order referred to, a contract had been entered into between the contractor and the government in writing "signed at the end thereof" by both parties. It is cases like this which emphasize the danger of government contracts and dealings, without adequate inquiry, care and investigation.

How easily an architect may become involved in difficulty, by a failure to take proper precautions in dealing with a corporation, was well illustrated by a case which was recently brought to me. The plans for the building were originally ordered by a client individually. It was stated, however, that a corporation was to be the owner of the property on which the building was to be erected, and that this corporation was being formed. Various letters, setting forth the agreement between the architect and the client, were exchanged. Thereafter the corporation was formed and the architect continued his dealings with the corporation, as the owner. He never secured any agreement from the corporation, recognizing definitely its obligations and the fact that it

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was the party in interest, as distinguished from the original client who had first brought in the matter, and who was an officer of the corporation. Disagreements arose, and the matter developed into litigation. The situation would have been much simplified if, on the formation of the corporation, a new agreement, whether in letter form or otherwise, had been made, recognizing clearly the fact that the corporation was now substituted as the party in interest, in the place of the individual. Fortunately, in the case referred to, the subsequent dealings of the corporation with the architect were such as to remove, to a substantial extent, the doubt which might otherwise have existed on this point. The matter might easily have developed somewhat differently, however, and the failure to secure some proper evidence of the corporation's liability might well have proven the cause of serious embarrassment and loss to the architect.

A rather famous case, decided in 1880 by the Supreme Court of the United States, involved the erection of a proposed new Courthouse and City Hall in the City of Chicago. It is interesting, as showing how easily an architect may be led to believe that all necessary formalities have been complied with, when this in fact is not the case, and when an absolute legal bar to his recovery exists. The architect was represented by Mr. Melville W. Fuller, who later became Chief Justice of the United States, and it may be taken for granted, therefore, that the decision was not adverse by reason of any lack of proper legal advice or effort.

The County of Cook and the City of Chicago, situated therein, had proposed to erect certain public buildings, the portions of the buildings to be used by each to be paid for by them respectively. They jointly offered a premium for the plans. A large number of architects entered the competition and submitted designs. Building committees of the City Council and the Board of County Commissioners duly reported their award of prizes, and the plaintiff in the case referred to was awarded the third prize. The prize, which was a thousand dollars in cash, was paid to him. Later, the County Commissioners and the City Council, respectively, adopted a resolution which provided, in substances, that the plan submitted by this architect and for which the prize had been paid, as above, should be and was selected and adopted, as the plan from which the buildings should be built, subject to any changes and modifications determined upon by the City and County authorities, and provided that the estimate of the architect presenting the plan, as to the cost of building construction, should be verified.

The architect testified that he had thereafter verified the cost of construction, and produced his plans for which the prize had been given, and offered to prove their value and the time and expense involved in their preparation. He further offered to prove a custom of architects, to the effect that the superintendence of the construction of a building belonged to the architect whose plans were adopted. He also offered to prove a custom to the effect that, where prizes for plans were offered, the plans of the successful competitor belonged to him, and that, if they were later adopted as the plans from which the building was to be erected, they should be paid for, in addition to the payment of the prize itself.

The trial court excluded all of this proposed testimony, and directed a verdict for the defense. The United States Supreme Court, in its decision on appeal, confirmed the correctness of this ruling, and pointed out that the resolutions of the County Board and City Council did not bind these bodies to make payment to the architect of the compensation which he claimed, but that they merely amounted to a selection of a particular plan and possibly, in addition, to the announcement of a purpose to erect a building in accordance with it. The court held that, if the buildings were so erected in accordance with the plans, then the claim might be well presented by the architect, but that in as much as they had not been erected, it must refuse to stretch the legal effect of the resolution adopted, to the extent of holding that it amounted to an agreement to pay for the plans, whether the work were proceeded with or not. Reading the case carefully, in the light of the court's decision, it is easy to see that the architect could not recover under the conditions which existed. On the other hand, it is not difficult to realize how the architect, in view of the resolution adopted by the governing bodies of the City and County, might easily have supposed that he had a valid agreement, that his plans had been formally selected, and that the proceedings taken had amounted, in effect, to his appointment as architect on a basis which would give to him a valid claim for the compensation which he sought, despite the fact that the work had not been proceeded with.

In a present day case, in which I represented the architect, another excellent example is furnished of the difficulty in which an architect may become involved, by reason of entering into a government contract, without proper consideration and advice. In the case which I have in mind the architect had won a competition for a memorial, to be erected under the direction of the government. The contract, which was prepared by the government and signed by the client, without any legal advice, provided a fixed compensation for the architect and further provided for a bond to be furnished by the latter. Realizing that this was a usual provision, the client signed the contract and thought nothing more of the matter, until it became apparent that the unrolling of the cus-

tomary government red tape (it was army red tape at that), would delay the completion of the memorial for many years. The memorial is not yet completed but, each year regularly, the architect receives a bill from the Surety Company which furnished the bond, requesting the payment of the annual premium due thereon. When he took up the matter with the government authorities in charge, they expressed to him their regret at the delay, but carefully set forth a number of perfectly good reasons why, under the law, the government could not make payment of the premiums, or make good the loss suffered by the architect in connection with them. The government representatives agreed with me that theoretically, on the basis on which the matter was proceeding, it might be quite possible that the total premiums paid by the architect on the bond might exceed the amount received by him for his services, if the delay of the government were to continue. They appreciated the difficulty and showed a desire to do anything which they could to help the architect, but were hampered by the laws and regulations, from proceeding as a private individual or a privately controlled corporation could have proceeded. Such a situation has in it elements of humor, which it was a bit difficult, naturally, for the architect to appreciate. We finally arrived at a solution which has straightened out the trouble, but the case remains a very good example of the restrictions which surround municipal corporations or government agencies, and which necessarily result in placing contractual and business dealings with them in a class by themselves, subject to special rules and requiring special care and consideration.

The Lien of the Architect

I venture the assertion that not more than forty per cent. of the architects, practicing today in this country, realize that the architect has been accorded protection under the lien laws and given a mechanic's lien on the building upon which his work is done. The extension of the protection of the lien law to architects is not, however, an especially recent development. The lien laws in the better jurisdictions have, for a considerable time, recognized the right of an architect to a lien for the work done. More recently, however, and especially within the last few years, the laws have been so broadened, as to give to the architect a degree of protection under the mechanics lien statutes, which he did not theretofore enjoy. In New York, for instance, prior to the Amendment of 1916, an architect was not entitled to a lien, unless he actually supervised the work done. The 1916 law so enlarged the scope of the word "improvement," however, as the latter word is used in the mechanics lien law, that the protection of the law has been now so extended, as to enable the architect to recover for the work done in the preparation of the plans and specifications, even though he may not act as the supervising architect. This is in accordance with plain common sense and fairness. The plans and specifications certainly enter into the erection of any building, just as surely as do the bricks and mortar and timbers and plaster work. The basis of a mechanic's lien has always been the improvement of the real estate, and certainly, the plans and specifications which are responsible for the erection of a building, of beauty or utility, contribute in large part to the improvement of the property on which it is erected.

A mechanic's lien is a particularly effective way of enforcing one's rights. The ordinary architect is, of course, well acquainted with the operation of liens, from his experience with sub-contractors and materialmen. He may be pleasantly surprised to learn how efficiently the filing of a simple lien may serve to protect his own rights and enable him to secure payment of a just claim where the client is not inclined to live up to his obligations. The ordinary architect's lien applies in the case of the construction of an entire building. The lien applies, no less however, to the case of alterations, and it may be of interest to architects, practicing in larger cities especially, to realize that the lien law has been successfully applied to give relief to an architect where the services involved consisted of changes in the premises of a sub-tenant of a large building.

This point arose in my practice a number of years ago, and I derived a considerable amount of pleasure from a case which made some new law in New York on this particular point. The case was in many ways an amusing one, although the owner of the building has never been able to properly appreciate its humor. The architect whom I represented had a client who was one of the tenants occupying a portion of the space of one floor of one of the large New York City office buildings. The tenant employed the architect to plan and superintend various changes in the lay-out of the tenant's offices, the erection of new partitions and the like. The architect did the work, prepared the plans, presented them to the owner of the building, who approved them, and superintendent the work called for. After the work had been done, the client, who had ordered the plans, became insolvent, and it became apparent that the only chance which the architect had to recover the fee due him lay in the enforcement of a lien against the building. We filed a lien for the amount due him accordingly. The effect on the owner was quite electrical. He was, without qualification, one of the maddest men that I have ever seen. To tell the truth, I did not blame him in the least, and I never pass the building, to this day, that I do not smile at the thought of his indignation, when he

learned that a lien had been filed against the property for alterations made by a tenant and agreed to by him as a favor to the latter. The approval of the plans by the owner, coupled with the fact that we were able to show that the partitions were not simply temporary, but were joined to the structure in a manner sufficient to bring the improvement within the scope of the statute, enabled us to sustain the lien. The owner appeared personally in court and fought the matter to a finish, but the court awarded judgment in favor of my client, and the owner finally settled with him for the work done. The pleasant thing about the mechanics lien, from the point of view of the architect is, of course, the fact that the claim is secured, and that if judgment be recovered, you may be reasonably sure that you will be paid either from the sale of the property, or by the Bonding Company which may have bonded the lien.

What Is Art?

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would take a hardy engineer to say that the appearance of these structures was not greatly helped thereby.

It does the engineers no good to sneer at "art" or architects, because of isolated examples of bad design. The public is coming more and more to understand that rarely does the engineer put into his design the grace and beauty that the well trained architect can give. Hence the ever growing demand that architects, landscape gardeners, sculptors, etc., be consulted on great public works.

Up to about twenty years ago, engineers or "practical builders" designed nearly all the factories and industrial plants. For that time they were very good buildings, indeed, and served their purpose most satisfactorily, but nothing has ever equalled them as a class in sheer depressing and dreary ugliness. Today, architects almost always design these buildings, very often, as subordinates to engineers. In spite of occasional examples of poor taste, these buildings are generally at least pleasing, and are often beautiful.

This difference from the old type of factory was not attained by the more common use of terra cotta, steel sash, etc. It lies in the general proportions of major and subordinate masses, the grouping of openings, the correct location of good ornamental design and a studied color scheme; all things of which the great majority of engineers have a very vague understanding.

The writer believes there is glory enough for all in large work, and that the engineer can no more enter the field of the architect than an architct can do engineering.

N. H. Holmes,
Assistant Engineer, Charles T. Main.
Boston, Mass.

Sir—I have read with interest Mr. Trautwine's criticism of the Bensalem Ave. bridge. There is no doubt that this structure has been marred by ornamentation wrongly applied, but when a man of his standing makes the absurd statement that because the engineer's training makes him an authority on strength it also makes him an authority upon beauty it is time to refute such a sweeping assertion.

The statement that any structure is beautiful which fulfills the purpose for which it is designed, is another half truth. Two men wear suits from the same piece of cloth. One suit has an ugly pattern and a discord of loud colors, but according to his logic, it is as beautiful as the other suit because it fulfills equally well the purpose for which it was made. Beauty is relative. A stone or concrete arch is infinitely more beautiful than any steel truss bridge can possibly be.

One of the first principles of architectural design is that ornament is not sought after itself alone. Beauty of line and proportion always come first. Ornamentation is a minor detail. If your eye is drawn to the ornamentation first, the structure has not been successfully handled.

Mr. Trautwine forgets that there are any number of bridges in this country that have been successfully treated architecturally, such treatment in no way obscuring the essential structural features. He uses this bridge as a basis for an attack upon the principles of architectural design. One might retort in kind by reminding him that the engineer's "instinct for simplicity" must have been mislead when the subway layout at the Grand Central Terminal was constructed. The fearful congestion of our cities is partly due to the so-called simplicity of the "checker board" system of laying out streets. The responsibility for the lack of a definite plan of our large cities rests largely upon the engineer because it was he who had charge of laying them out in the earlier days.

It is reasonable to state that while an architect of recognized standing would hardly be so rash as to claim to be an "authority" on beauty, he is by inclination and training better fitted to be a judge of beauty than Mr. Trautwine. There are just as many mistakes and errors of judgment in the design of engineering structures as there are examples of faulty architectural design. Mr. Trautwine should endeavor to correct the errors and omissions of his own profession before attempting to pass judgment upon another.

Pittsburgh, Pa. S. S. McKay.

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Reasonable Billboard Ordinances

Valid When in Interest of Public Health, Safety or Morals—Invalid When Based Purely on Esthetic Grounds

By A. L. H. STREET*

MAINTENANCE of billboards on private property cannot be prohibited by ordinance on the ground of offensiveness to the esthetic sense. But they may be the subject of reasonable regulations designed to promote the public health safety and morals.

It is believed that this is an accurate statement of the general rule on this subject, as determined by the weight of judicial decision.

The courts seem to have been uniform in their conclusion that enhancement of the beauty of municipal scenery is not recognized by the law as sufficient excuse for enacting billboard regulations. The judicial attitude on this phase of the subject is well illustrated by the decision of the Illinois Supreme Court in the case of Haller Sign Works vs. Physical Culture Training School, 249 Ill. 436, 94 N. E. 920, 34 L. R. A. (N. S.) 998, Ann. Cas. 1913D, 959. The law there under consideration provided:

"It shall be unlawful . . . to erect . . . a structure of any kind . . . within five hundred feet of any public park or boulevard within . . . any city in this state having a population of one hundred thousand or more, for the purpose of placing advertisements of any kind or character thereon, etc."

Noting that the act covered parks and boulevards only, and making other observations, the Court said:

"These suggestions lead unmistakably to the conclusion that the statute in question is an attempt to exercise the police power purely from esthetic considerations, disassociated entirely from any relation to the public health, morals, comfort, or general welfare. However desirable it may be to encourage an appreciation of the beautiful in art and to cultivate the taste of the people of the state, still it has never been the theory of our government that such matters could properly be enforced by statute when not connected with the safety, comfort, health, morals and material welfare of the people."

The highest court of the land has approved the view that esthetic considerations alone will not support an ordinance restricting the maintenance of billboards. As late as March 24, 1919, and in the case of St. Louis Poster Advertising Co. vs. City of St. Louis, 39 Supreme Court Reporter, 274, that tribunal said of the ordinance there under consideration:

"Possibly one or two details, especially the requirement of conformity to the building line, have esthetic considerations in view more obviously than anything else. But as the main burdens imposed stand on other ground, we should not be prepared to deny the validity of relatively trifling requirements that did not look to the satisfaction of rudimentary wants that alone we generally recognize as necessary."

A few years ago it seems to have been quite commonly supposed that unless a billboard ordinance had some reasonable tendency to limit fire risks or to avoid blowing over of such advertising structures to the peril of person or property it could not be sustained against attack upon its validity. But this view cannot be said to reflect the law as recognized now. On this point see the further remarks of the United States Supreme Court in the case last cited, wherein the Court upheld the validity of an ordinance of the city of St. Louis containing provisions of which the following is a summary: It allows no billboard of twenty-five square feet or more to be put up without a permit and none to extend more than fourteen feet above the ground. It requires an open space of four feet to be left between the lower edge and the ground, forbids an approach of nearer than six feet to any building or the side of the lot, or nearer than two feet to any other billboard, or than fifteen feet to the street line, and without qualifications requires conformity to the building line. No billboard is to exceed four hundred square feet in area. The fee for a permit is one dollar for every lineal five feet.

In attacking the ordinance, plaintiff represented that its billboards would withstand wind of greater velocity than had ever blown in St. Louis, and that they were so covered by galvanized iron as to exclude all danger from fire. But the Supreme Court said:

"Of course, the several restrictions that have been mentioned are said to be unreasonable and unconstitutional limitations of the city in the interest of the safety, morality, health and decency of the community.' . . . It is true that, according to the bill, the plaintiff has done away with dangers from fire and wind, but apart from the question whether those dangers do not remain sufficient to justify the general rule, they are or may be the least of the objections adverted to in the case."

And the Court makes this further important declaration:

"If the city desired to discourage billboards by a high tax rate we know of nothing to hinder."

Grounds of objections to billboards mentioned by

*In *The American City* for October.

the Missouri Supreme Court in St. Louis Gunning Advertising Company Case included the tendency to facilitate the commission of crime and nuisances in the rear of such structures, especially where the boards are permitted to come close to the ground. And, under such circumstances, it is found that there is a natural menace to the public health. And yet the decision in this case clearly shows that billboards cannot be excluded on mere grounds of unsightliness, and that the municipal power over them ends when considerations of public safety, health, morals, and good government have been met.

Another leading decision on the point that an ordinance limiting the right to maintain billboards on private property must have some relation to the public welfare is to be found in the case of People vs. Hastings, 77 N. Y. Misc. 453, 137 N. Y. S. 186, wherein it was decided by a New York court that an ordinance requiring a billboard to be constructed of metal was void as applied to a situation where a board constructed of wood could constitute no fire menace. Nevertheless the same court said that an ordinance requiring a permit for erection of boards more than five feet high was valid.

In the case of Thomas Cusack Co. vs. City of Chicago, 242 U. S. 526, 37 Sup. Ct. Rep. 190, it was decided by the United States Supreme Court that an ordinance of defendant city was valid which forbade erection of billboards more than twelve square feet in area in any block where one-half of the buildings on both sides of the street were used exclusively for residential purposes, unless a majority of the frontage owners consented in writing.

The Suspicious Client

MAN is born to trouble as the sparks fly upward and even architects cannot escape the ills of humanity, while we might add that of late years between the Scylla of war restrictions and the Charybdis of Government interference and labor difficulties they have had possibly an unfair share of trouble. So writes the *Architect* of London under this heading. But these or some of them we may hope to see removed—if we have the patience of Job—but there is one trouble that most of us have experienced more than once, which may be always with us, and this may be defined as the Suspicious Client. The Suspicious Client can be divided into many classes. First, we have what may be termed the lower grade of business man who, conscious of his own customs and methods of doing business, cannot conceive of the average architect's standpoint. Such a man argues that because an architect controls the expenditure of considerable sums of money some of it must stick to his fingers. He would in truth more often than not condemn an architect for stupidity if he understood that nothing of the kind took place. We have known a member of an important public body who explained at a meeting of that body that it was necessary to go through an architect's specification in order as far as possible to eliminate his opportunity of taking secret illicit commissions as he said it was well known that this was a general practice in the profession. The architect in question being present remarked that the public body were unwise if they employed any man whose honor they had reason to suspect, and privately warned the speaker that a repetition of his remarks would be met by a demand for a written apology; but the remark was made in perfect good faith, and without the least intention of offending, and we believe the speaker afterwards thought that the architect was very thin-skinned to have objected to such an imputation. It was well known to the town we are speaking of that many years ago there was an architect, wholly unqualified and a member of no professional body, who never gave a certificate to a builder without receiving a check for his condescension first.

But these incidents happened in the bad old days, which we hope are now past and at a distance from the sacred shrine at No. 9 Conduit Street.

Another variety of the Suspicious Client is more frequently met with nearer the haunts of civilization, and may be defined as the man who makes up his mind that the architect is anxious to induce him to spend more money and to incur extras. Of such a type was a well-known provincial solicitor who built himself offices. He told his friends that when his architect came to him, as he did on several occasions, with suggestions that would improve the design, he asked him whether they would increase the cost, for if so he did not wish to hear of or discuss them. The architect filled the highly colored role of the tempter, and was at once suspected, and the solicitor advised all his friends who had to deal with the dangerous and uncertain race to follow his example.

A third variety of the Suspicious Client is the man who quickly begins to believe that architect and builder are plotting against him, and who covertly calls in other advice to see if he cannot trip up the

malefactors. Such a man will never believe that he is receiving his money's worth, and spreads a doleful story of the architect's secret machinations. He has one consolation: it is true that the world must seem to him a very interesting place, beset as it is with lurid drama, but in the process he is a little trying to the architect who endeavors to do his best.

Yet another variety of the Suspicious Client has the overmastering conviction that the architect only cares about appearances, and is ready to sacrifice all material comfort and convenience in order to carry out his artistic ideas, and such men often obtain considerable help and assistance from their wives in making out a true bill against the architect who always fails in making every room a nest of cupboards. That unhappy man may be partially consoled by the knowledge that his client does not suspect him of actual fraud, but only of criminal negligence, which is partially explained by his ignorance, but he may, nevertheless, be a terror to deal with.

The man who builds and who cannot from drawings realize fully what he is going to obtain may frequently become in the end a Suspicious Client, and his suspicion may develop on any of the lines we have described, for this reason it is always well to be extremely careful in the case of the client who is disposed to leave everything to his architect's better judgment. The client may say at the beginning that he will leave everything to the architect, but the latter is wise if he does not assume that for that reason the client has forgone the Englishman's love of grumbling. An appearance of settled, fair weather at the commencement of a job is, in fact, more frequently than not the precursor of a stormy finish, for the client would be the last to admit that his architect had any justification for not giving him exactly what he imagines he wanted all along. The architect is, therefore, prudent if he tries to force his client to understand at the beginning, and should refuse to take the *carte blanche,* which experience should teach him is never meant. Similarly the client who affects a sort of offhand indifference to questions of cost at the beginning often quibbles about the smallest item in the end.

Our picture of the architect's burbear—the Suspicious Client—should make the rest of mankind feel how necessary it is to comfort and sustain the architect amidst his trials. To do this it is only necessary for the Ideal Client to come forward in large and increasing numbers, to remove all restrictions, and to increase the architect's rate of pay, and in short to make the practice of architecture, as it should undoubtedly be, the happiest, noblest, and most lucrative calling in the world. If this is done the occasional Suspicious Client whom we are compelled to meet and deal with will not bring us in sorrow to an early grave, though his efforts may induce the coming of silvery patches among our once raven-colored locks.

Making the Most of the Back Yard

IT is usual in the treatment of suburban properties which lie well within the corporate limits of the city proper to divide the individual lot into two main parts, the front yard and the back yard, states E. S. Stiles, landscape architect, of Charlotte, N. C. The long, narrow shape of such lots precludes any great amount of utilization of the side yard areas because the house itself occupies the greater portion of the width of the lots. Hence the usual custom is to treat these lots as a uniform development on the street or front side of the property by giving all houses a uniform setback of from twenty-five to sixty feet from the street, thereby affording a small front yard which cannot well be treated otherwise than by establishing a good lawn, planting a few shrubs around the porch steps, and sometimes adding a low hedge next to the front sidewalk.

This means that this class of suburban property owner must confine whatever development of the home grounds he undertakes to the back yard; and in the majority of cases this too often results in the utilization of this portion of the property as a clothes drying area, a small vegetable garden, and, even worse, a general repository for odds and ends. However, if careful thought is given to the proposition and sufficient attention paid to the community spirit for the pooling of individual lawn areas, much may be done in the way of utilization of this back yard area as a place for private recreation for the owners of the properties adjacent.

This will apply equally well to two houses which back directly upon each other, a group of houses, or even a whole portion of a small block. And indeed, from a community standpoint, these last have a distinct advantage over lots of a larger area, as they are usually too small to admit of vegetable gardens of sufficient size to pay for their construction and maintenance, while the garage problem is usually solved by the owners of these properties keeping their cars in some nearby garage. The proprietor of a suburban home with a greater lawn area is usually

(*Continued on page* 587)

Street Bridge, Hartford, Conn.

(See reproduction of the original drawing by O. R. Eggers in this issue)

THE master builders, during and after the Colonial period, were a conscientious lot of men. Everything they did received the same careful study, the same painstaking care in the working out of every essential thing to create a proper result.

This statement finds proof in the design of the bridges they erected, and the one chosen as the subject of Mr. Eggers' sketch is a fine example.

Many of these early bridges are models of good masonry design. Their rugged surfaces after centuries of exposure have taken on a very fine patina that delights the eye of the artist. To add to the picturesque effect there is often a background of foliage that at places trails on the water's surface in the summer days or in winter gives a delicate framing of the tracery of trees and shrubs.

When carefully designed, an old bridge will have to architects the same artistic appeal as old houses. Their study, and the setting forth of their well considered outlines as a means of graphic preservation is therefore very much worth while.

STREET BRIDGE, HARTFORD, CONN.
THE AMERICAN ARCHITECT Series of Early American Architecture

XUM

EDITORIAL

The High Cost of "Graft"

THE New York State Legislature has appointed a committee to investigate the conditions which have resulted in the present high cost of building in New York City. It has been holding sessions and unearthing much evidence of illegal combinations. Samuel Untermeyer has been named as counsel for the committee, and with skill and energy, the result of long and valuable service as counsel to investigating committees, is getting valuable results. There are signs of much uneasiness and a desire on the part of many men whose skirts are not too clean to take cover under the thin cloak of the informer.

The testimony brought out is in no sense a revelation to those who are familiar with what has been going forward in New York. It is, however, a curious study in psychology to read the testimony thus far given by men whose probity is unquestioned. For example, one man commenting on the fact that a certain builder was mulcted to the amount of $25,000 to secure the calling off of a protracted strike on a $2,000,000 contract, made the statement that in his judgment "the graft was too high." This was said in the same serious way he might have stated that the prices paid for materials were excessive. It was a tacit acknowledgement that in figuring cost, a certain "graft" had to be added to guard against possible loss. Another feature of the testimony brought out by Mr. Untermeyer was that "graft" was necessarily higher now, as the cost of living was everywhere higher. The blunting of the moral sense appears to be at the very foundation of these irregularities.

THIS was strikingly shown by the testimony of one of the witnesses who, driven to a point of desperation by the searching questions of counsel, pathetically asked to be excused from further questioning along certain lines, stating that if he, through any admission on the witness stand was driven out of his present business, there were others, in spite of all the risks, eager and willing to succeed him and carry forward the same methods. Further, to substantiate this, he cited the case of Sam Parks convicted of grafting and who was sent to jail some years ago and died there. The same methods, he claimed, were carried forward with more thoroughness and at greater cost to the building interests than ever before.

The point that this witness was desirous of making was that the present conditions were a necessary evil in building operations and that if those now exacting graft were eliminated, it would be but the removal of individuals and not the eradication of the methods they represented.

It would thus seem that once a man finds that if he is to continue in the business of building contracting, he must figure graft as part of his costs, he apparently loses sight of the innate wickedness of it and only condemns it when it becomes in his judgment, unreasonably high. It is well enough to state that there are laws which regulate these things, but the offender must first be caught open-handed. The ways of the grafter are shifty and he knows his risks. Besides, there is a certain freemasonry among these people which works in co-operation so subtle as to cover up all evidence and make it difficult to secure conviction. Undoubtedly "the graft is too high" today, and if we are to reduce the high cost of buildings we shall have to include in our efforts the reduction of the high cost of graft.

The Exodus from the Farm

A PRELIMINARY report issued by the Director of the Census shows that during the past ten years, cities grew seven and a half times as quickly as country districts. High wages, enlivening environment and all the many lures of city life are undoubtedly the underlying causes for this large exodus on the part of young people from the country to the city.

Just how to check this exodus, to maintain a lower average of transference of population from country districts to the city, has long been studied and no actually practical solution been evolved. Several years ago a remedy was suggested by Judge Howard, of Troy, N. Y. It is in operation in Australia and in California and has recently been again

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proposed in substance by Asher Hobson, professor of economic agriculture in Columbia University.

The scheme is to provide money or credit with which any family that desires to take up farming may establish itself in some well developed and convenient farm area. Prof. Hobson is of opinion that the expenditure by the State of a small fraction of the hundreds of millions it has spent on waterways and highways would subtract many thousand families from the ranks of the consumers and turn them into producers. Possibly this might work out as it is supposed to, when put to the test of actual practice, but it would first be necessary to eliminate the political features that so largely surround our attempts at economic reconstruction as was shown when the housing and landlord and tenant bills were recently enacted in New York.

A PRACTICAL way to check this change from rural districts to the cities would be to follow the suggestions set forth in the columns of THE AMERICAN ARCHITECT many times in the course of the past two years. A goodly proportion of those who forsake country life for cities do so because of the sordid commonplace aspect of their surroundings. The farm is no longer the outlying inaccessible location it was a decade or more ago. With the extension of trolley systems and the development of the motor driven vehicle, farmers may find ample opportunities often to visit their market towns. Isolation, lonesomeness, is no longer the soul destroying thing that accompanied farm life in the past. But easy contact with nearby towns and villages begets knowledge of city ways of living, and the farmer is led to compare the surroundings of his own home life, its sordid, poorly designed and planned elements, with those of the people who dwell in large towns and small cities. While the responsibilities that beset him make it necessary that he stick to his farm, these responsibilities do not so insistently affect the younger members of his family. Hence the migration to cities.

When all the deterrent factors that beset the building situation in this country are removed, we shall have to give very thoughtful attention to the matter of housing. There is danger that so much thought and energy will be spent on supplying the urban dweller with a home that the needs of farming communities may be overlooked. We are not disposed adversely to criticize the scheme as proposed by Prof. Hobson, but while the legislatures are debating the means of carrying forward a scheme such as he proposes, the state departments of agriculture, already equipped to carry forward the work of improving the farmer's surroundings, may set themselves that task. The results would undoubtedly be successful in improving the general aspect of the farmer's home surroundings and the next census, nine years hence, would undoubtedly show a lower percentage of desertion from our farming communities.

See America First

MANY of us who have travelled abroad have experienced no small sense of mortification on our inability to answer intelligently the questions that have been put to us as to important and picturesque locations in our own country. The well maintained roadways over which the tourist in Europe travels in his sight-seeing tours were until a comparatively recent period far better than any we had in similar locations in the United States. During the world war when travelling on the continent was not possible, many Americans for the first time turned their thoughts to seeing America. Those who did, found that their journeys to our national parks and other scenic locations were beset with the difficulties of poor roadways and indifferent transportation and hotel accommodations.

But these things are gradually becoming better. The Lincoln Highway is slowly but surely becoming a roadway from Coast to Coast that will eventually become one of the fitting memorials to a great man. Straight across the continental divide, the government has started to hew from the native rock of Glacier National Park, Mont., what is destined to become one of the most picturesque highways in the world. This 38-mile stretch of hard roadway will lift the motorist to an altitude of 9,000 feet at the crest of the Rockies by the most gradual rise possible. For the great part the grade will average only six per cent., though an occasional stretch will reach the eight per cent. grade to which the engineers have been restricted. The new highway is to connect with the existing 30-mile highway in the eastern part of the park, to make possible an uninterrupted tour of 68 miles over hard, smooth roads.

The war has taught the necessity for good roads as a help to transportation of materials and supplies when railroad lines were congested with government transportation, so we shall no longer have to set forth arguments for the maintaining of national highways already built and the opening up of new ones.

We may repeat the slogan, "See America First," knowing that this admonition will not rebound with a protest that it cannot be done with the same ease of travel as in Europe. And when we travel more in our own country before we attempt to cross to Europe we shall have acquired an Americanism that will result in a more cultured and better informed citizenry. The American tourist in Europe will be representatively a type which those at home need not feel ashamed to acknowledge as fellow citizens.

NOVEMBER 3, 1920 THE AMERICAN ARCHITECT VOL. CXVIII, No. 2341

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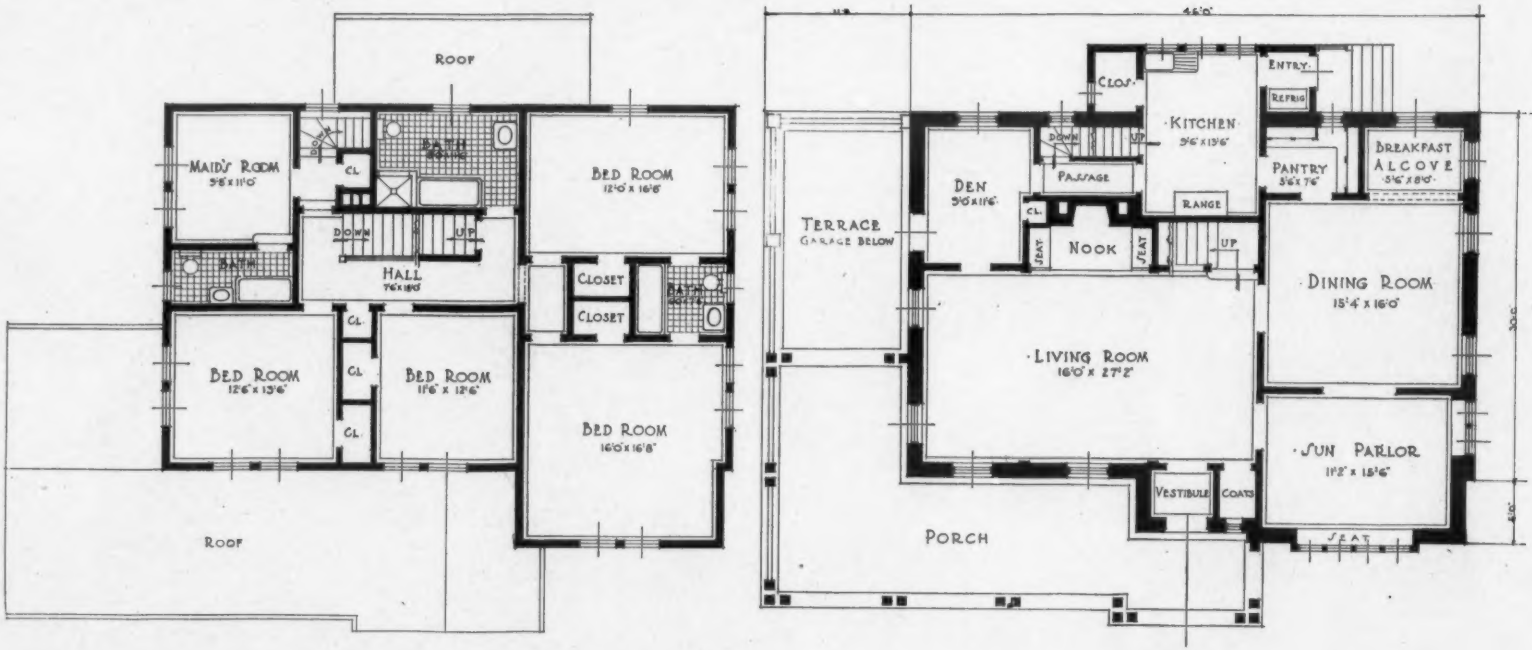
HOUSE OF ROBERT J. EDWARDS, PARK MANOR, PATERSON, N. J.
CHARLES H. BENJAMIN, *ARCHITECT*

First story exterior walls are of buff brick, with range of six colors, laid in Flemish bond with raked joints. Above first story exterior walls are constructed of 2″x4″ studs sheathed and covered with heavy fibre quilt. All exterior woodwork is of cypress with stained brown finish. Half-timber work is formed with 1½″x8″ rebated material. Stucco work is of light buff color with stippled finish. Roof is covered with mottled slate. Hanging gutters and leaders are of copper. Floor of porch is formed of reinforced concrete slab with red cement finish and brick border. Vestibule, den and living room are finished in chestnut. Living and dining rooms have beamed ceilings of chestnut. Floors are of white oak with border, wax finished. Floor of vestibule is of Welsh quarry tile. Walls of dining room are paneled 6′ 0″ high in gum, stained to imitate Circassian walnut. Walls of living room and den are sand finished. All other walls are finished with flat paint. Fireplace in living room nook is built of buff-colored brick with wood overmantel. Kitchen walls are tiled 6′ high. Bath rooms are tiled 4′ 6″ high.



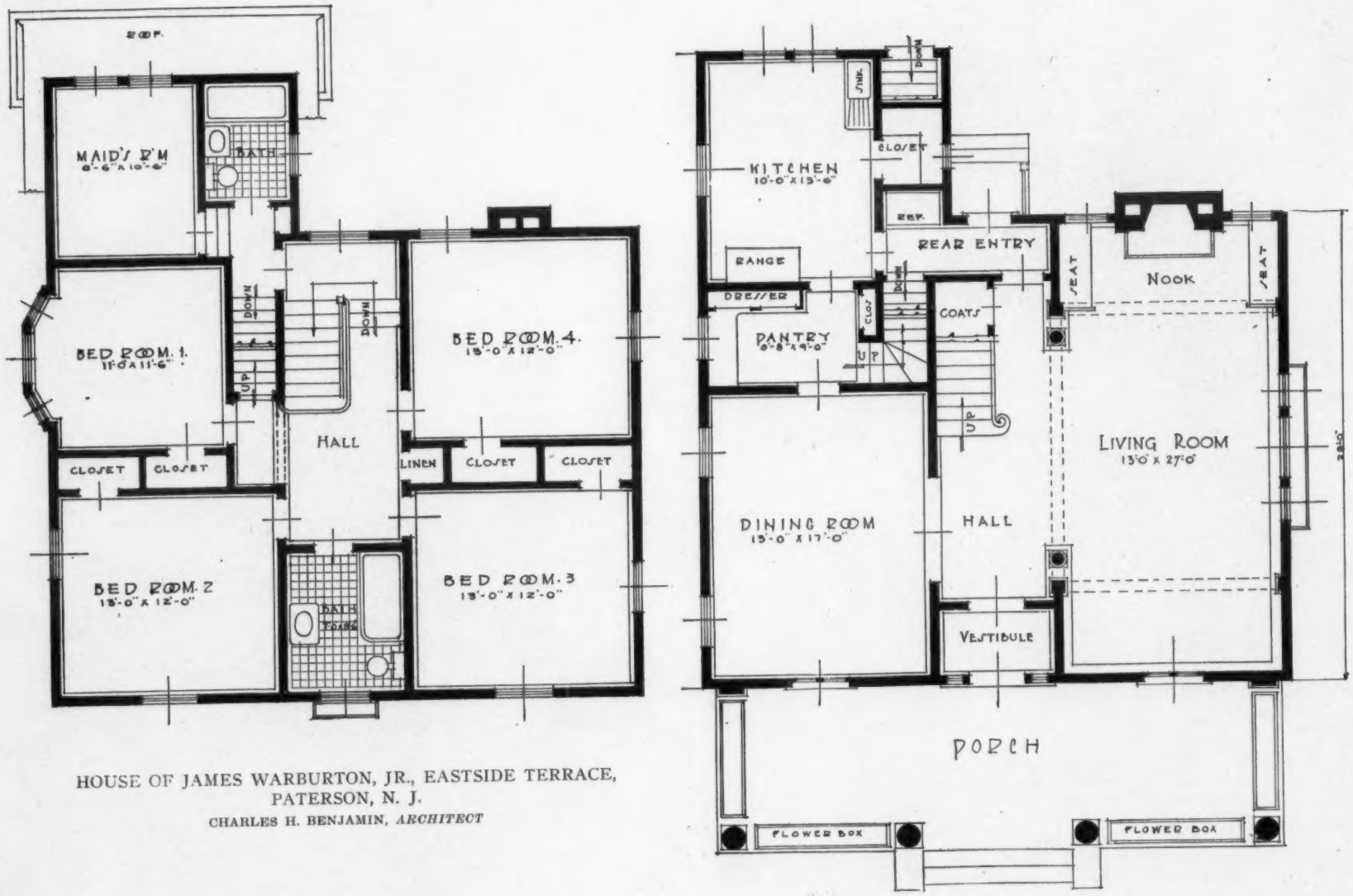
SECOND FLOOR PLAN FIRST FLOOR PLAN

HOUSE OF ROBERT J. EDWARDS, PARK MANOR, PATERSON, N. J.

CHARLES H. BENJAMIN, *ARCHITECT*

HOUSE OF JAMES WARBURTON, JR., EASTSIDE TERRACE, PATERSON, N. J.
CHARLES H. BENJAMIN, *ARCHITECT*

Exterior walls, of 2"x4" studs, sheathed. Lower portion of walls and porch columns finished in stucco, light grey in color, stippled. Upper portion of building finished with shingles stained white. All exterior woodwork is white pine painted white excepting shutters, which are a pale green. Roof is covered with variegated slate. Gutters and leaders are galvanized iron painted white. Chimney is brick with stucco finish. Porch floor is of concrete with red cement finish and border of white cement. Living room fireplace is of red tapestry brick with Colonial wood mantel and flanked by seat on either side. Living room has beamed ceiling. Woodwork of living and dining rooms is whitewood with white enamel finish. Floors are of white oak with border, wax finished. Stairway is of Colonial design with birch treads, newels and handrails with mahogany finish. The remainder of stairway is whitewood with white enamel finish. Dining room walls are paneled 5′ 6″ high and finished with plate shelf. Kitchen is tiled 6′ high. Second floor is finished with whitewood trim, white enameled. All walls are finished with flat paint. All doors are of birch, mahogany finished, with one panel. Bed room closet doors and door of coat closet are glazed with mirror full height. Bath rooms are tiled 4′ 6″ high.

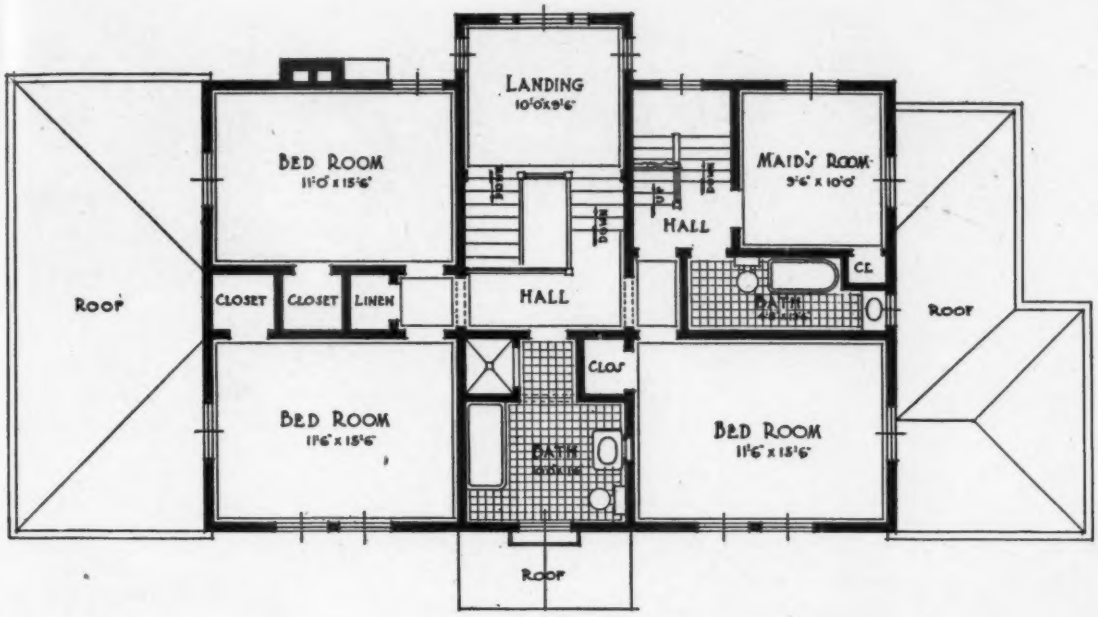


HOUSE OF JAMES WARBURTON, JR., EASTSIDE TERRACE, PATERSON, N. J.

CHARLES H. BENJAMIN, *ARCHITECT*

HOUSE OF JAMES J. ZISETTE, EASTSIDE TERRACE, PATERSON, N. J.
CHARLES H. BENJAMIN, *ARCHITECT*

Exterior walls are of 2″x4″ studs, sheathed and stuccoed. Stucco is light buff in color with stippled finish. All exterior woodwork is of white pine painted white. All roofs are covered with mottled slate. Gutters and leaders of galvanized iron painted white. Chimney is of brick, stuccoed and with cast stone cap. Porch floor is of concrete with red cement finish and plain cement border. Living room fireplace is of tapestry brick with Colonial mantel and built-in bookcases on either side. Living and dining rooms have beamed ceiling. All trim throughout excepting dining room and den is of whitewood with white enamel finish. First story floor of white oak with border, waxed finish. Vestibule floor is of Welsh quarry tile. Den is finished with chestnut, painted silver grey. Dining room walls are paneled 6′ 0″ high and finished with plate shelf. Dining room trim is of red gum, stained to imitate Circassian walnut. Kitchen is tiled 6′ 0″ high. All walls except as otherwise noted are finished with flat paint. All doors are of birch, mahogany finished, with one panel. Doors of bed room closets and coat closet are glazed with mirrors full height. Bath rooms are tiled 4′ 6″ high.



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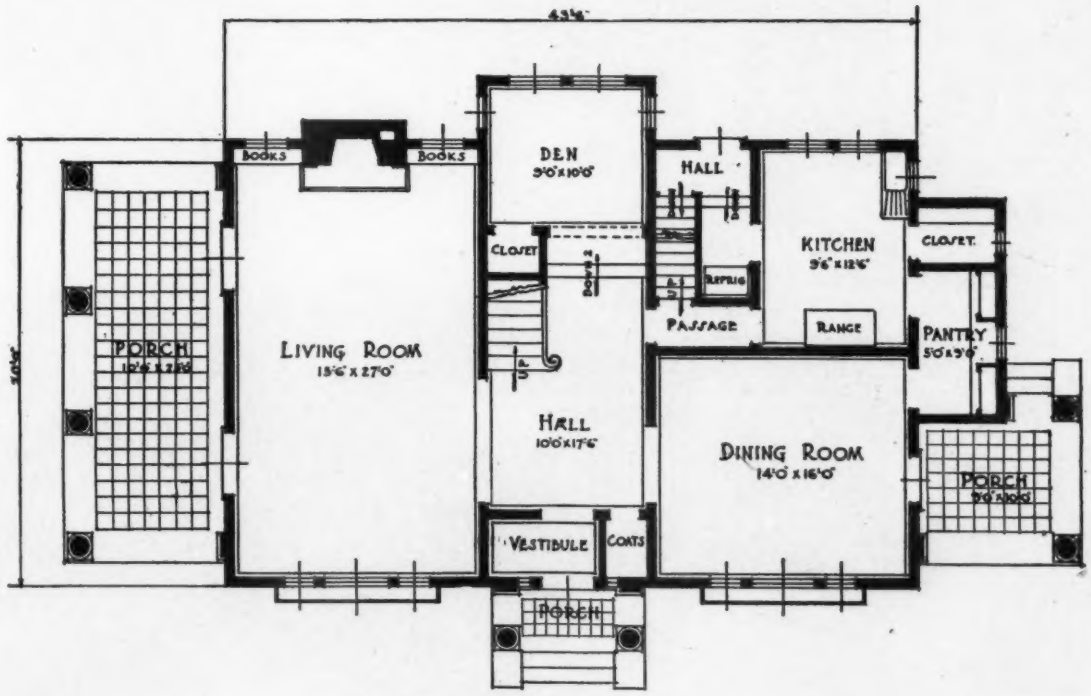

FIRST FLOOR PLAN

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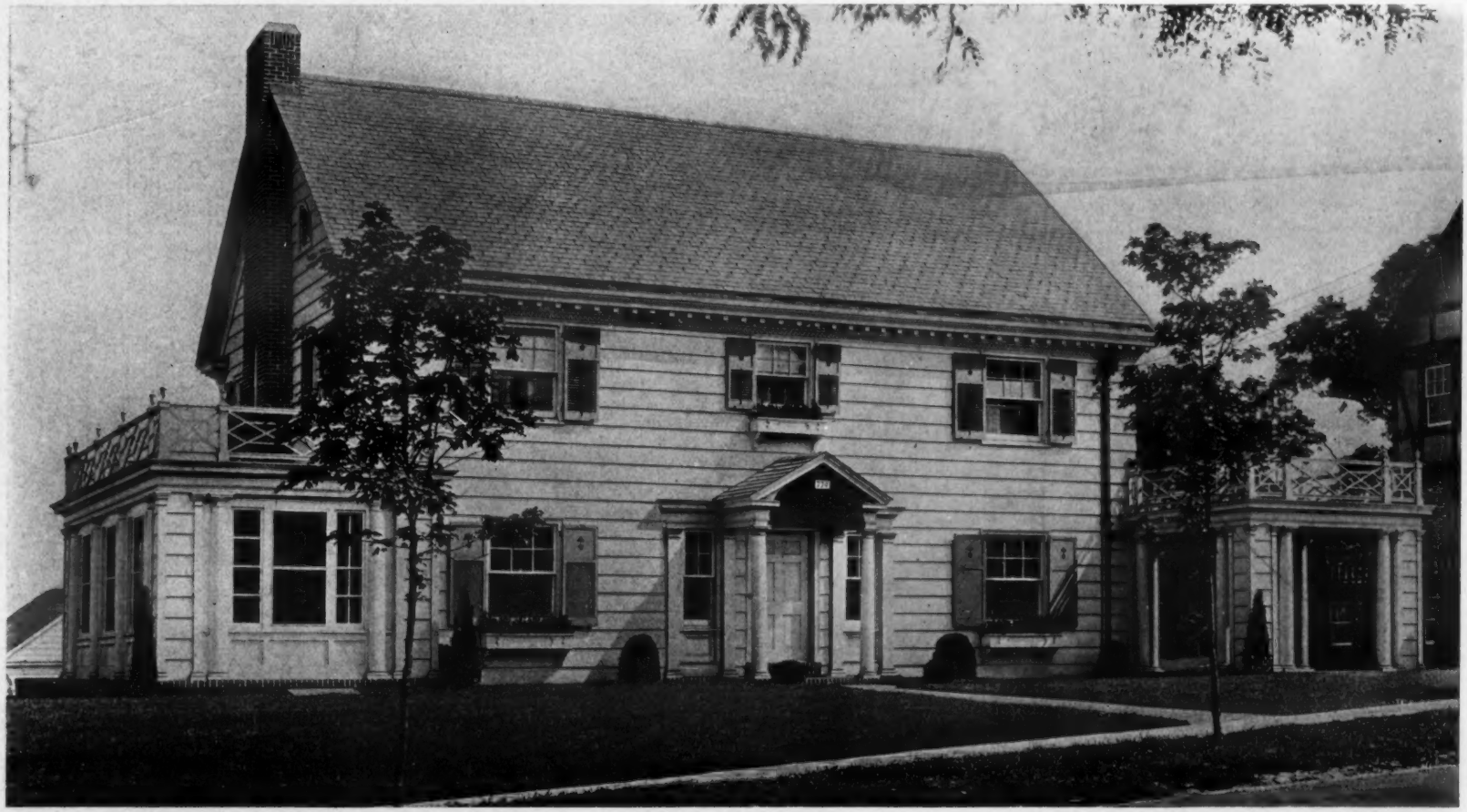
CHARLES H. BENJAMIN, *ARCHITECT*



HOUSE OF JOHN J. FISHER, PARK MANOR, PATERSON, N. J.
CHARLES H. BENJAMIN, *ARCHITECT*

Exterior walls are of 2″x4″ studs, sheathed and finished with 1¼″x12″ rebated white pine siding. All exterior woodwork is white pine painted white excepting shutters, which are a pale green. Roof is covered with variegated slate. Box gutters and leaders of copper. Chimney is of red tapestry brick with splayed sides, laid in white mortar. Chimney cap is of white cement. Floor of sun parlor and open terrace is reinforced concrete slab with red cement finish and tapestry brick border. Garage is located under the terrace, advantage being taken of slope in grade. Living room fireplace is of tapestry brick with Colonial wood mantel. Kitchen walls are tiled 6′ high. Interior trim throughout, excepting den, is whitewood, with white enamel finish. Den has chestnut trim with silver grey finish. Living room, hall and dining room have Colonial wood cornice and dado rail. All doors are birch, mahogany finished, with one panel. Bed room closet doors and door of coat closet are glazed with mirror full height. Main staircase has birch treads, newels and railings with mahogany finish. Balusters are of whitewood. Walls of living room, hall and dining room are decorated with grass cloth. All other walls and ceilings are finished with flat paint. Bath room and lavatory are tiled 4′ 6″ high.

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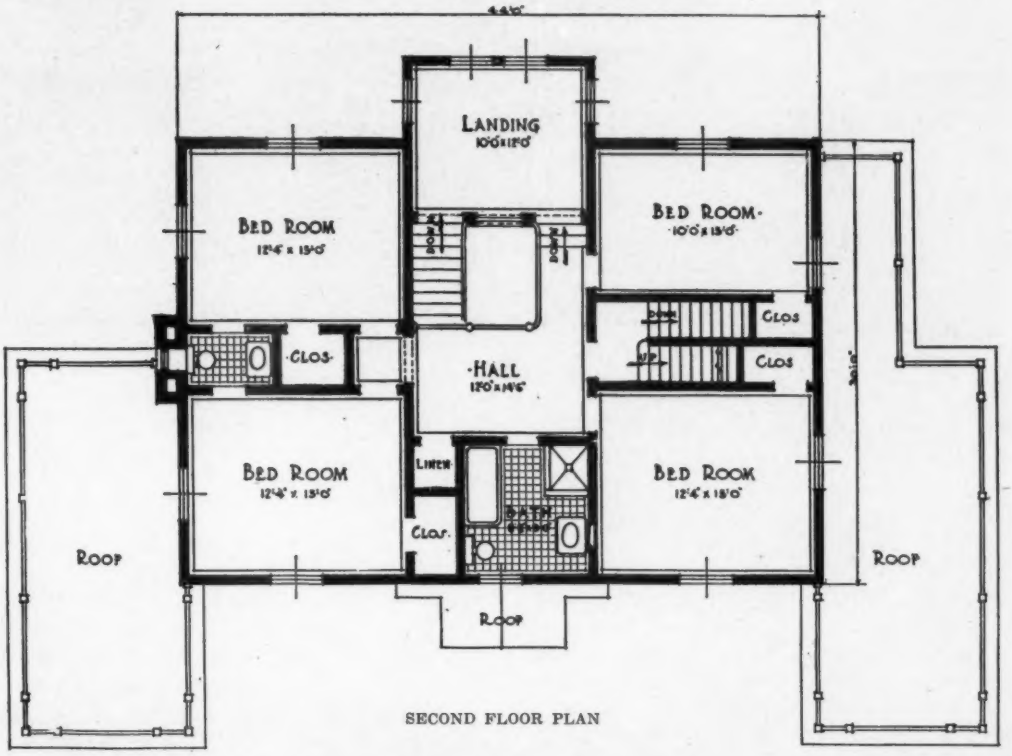

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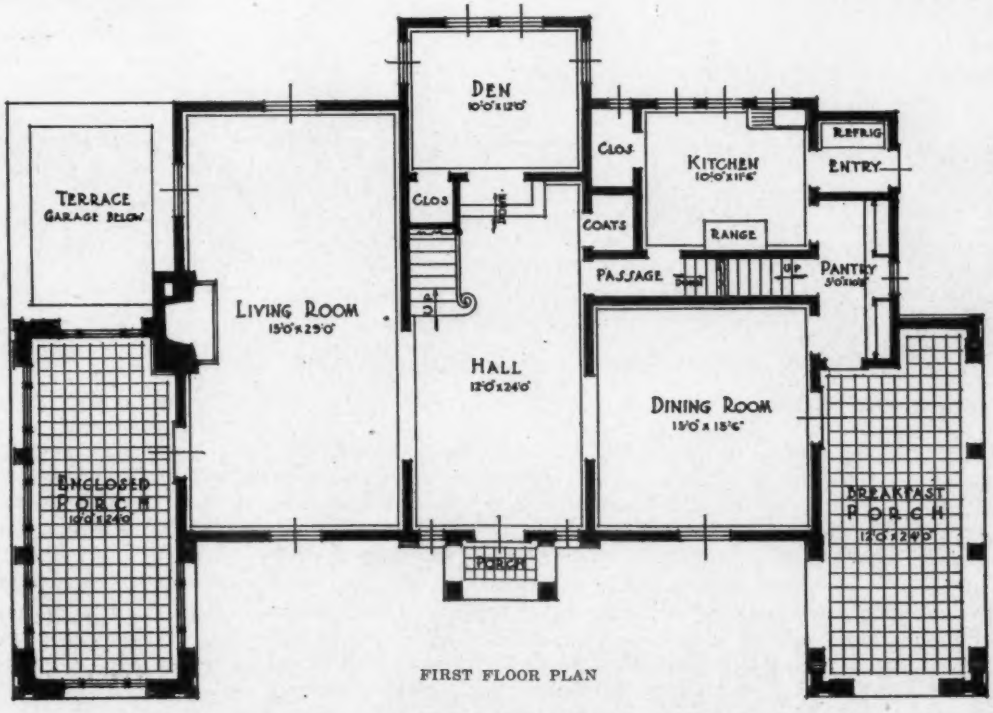

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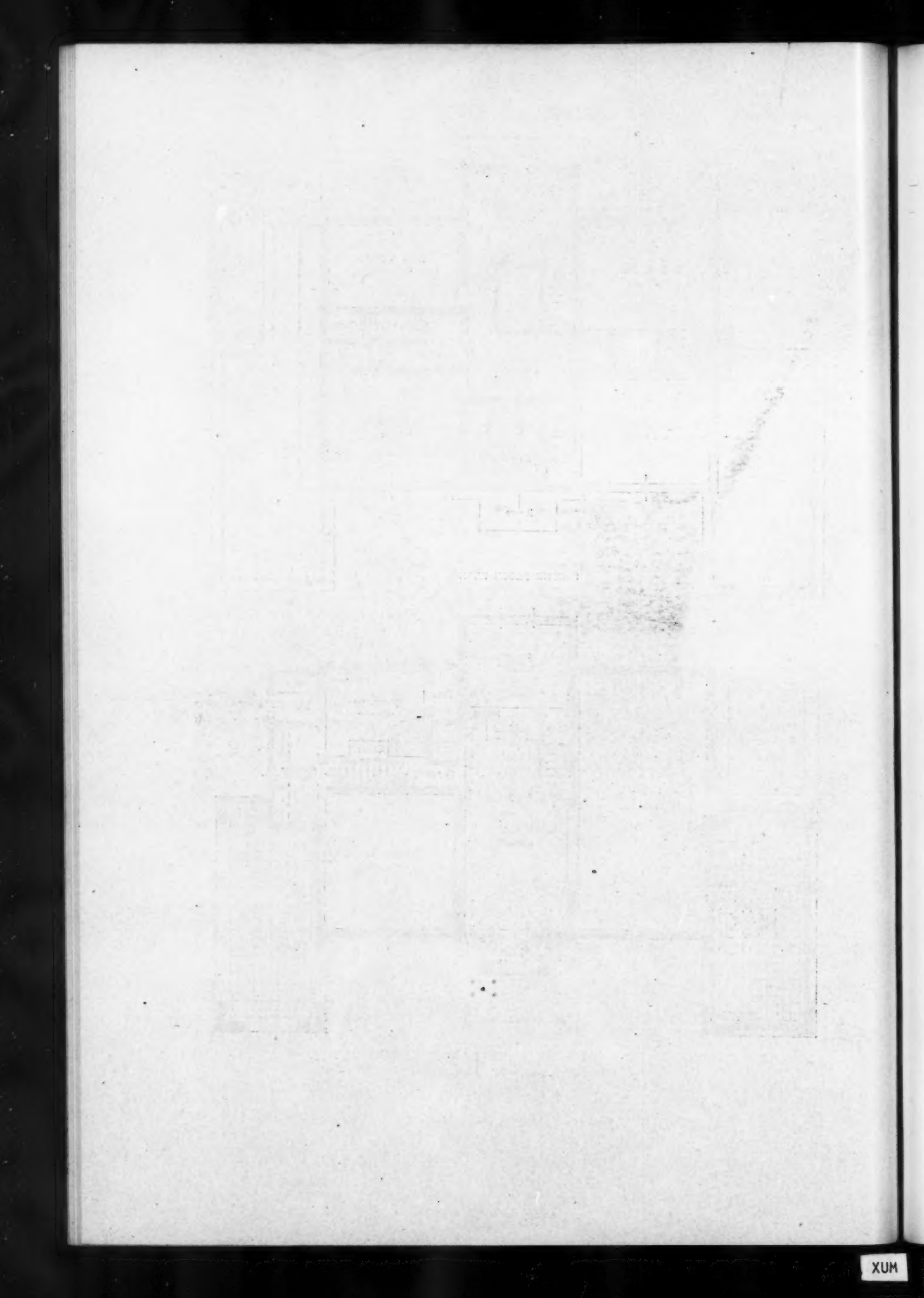


Foundations—Their Selection, Design and Construction

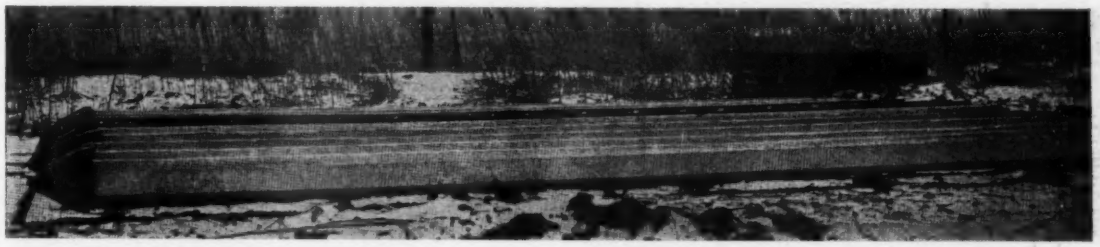
Part IV

IN the previous article the spread footing was described as well as eccentric wall footings. In this article we will consider another type of foundation, that embodying the use of piles.

When the nature of the soil at a depth within a few feet of the basement floor level is such that spread footings are impracticable, the superimposed load, brought down by walls, columns and piers, must be transmitted to an underlying strata of firmer material. There are three general methods of accomplishing this purpose: (a) piles; (b) sheet piling and open excavation; and (c) pneumatic caissons.

The choice between these three methods depends on (a) magnitude of loads to be supported; (b) physical conditions at the site; (c) relative costs and, (d) time required for construction.

Where the ground is dry, no difficulty will be encountered in carrying on open excavation to the desired level. All vertical banks of earth, must, of course, be properly sheet piled. In many localities, however, ground water is encountered at or below the basement level. If the depth of firm strata, capable of supporting the weight of the super structure, is shown by borings to be not very great, and the ground water seeps in slowly, continuous pumping will permit the excavation to be carried forward in open trenches and pier holes, well sheet piled. Sometimes tongued and grooved sheet piling is used to retard water seepage. Another method is to drive interlocking steel sheet piling, which will hold back the water to a considerable extent. Some extensive work has been carried on by this method, which will form the subject of a later article. The novel method employed in the excavation for the Annex to the Ambassador Hotel at Atlantic City, described in the October 20 issue, can also be used to advantage under similar conditions. Where considerable water is encountered, and a firm strata can only be reached at a very considerable depth, the pneumatic caisson offers the only solution. The foundation of the Woolworth Building is of this type, these concrete shafts, in the neighborhood of 15 feet in diameter, extending to a depth of some 130 feet below curb to



GROUP OF GIANT PRECAST CONCRETE PILES IN PROCESS OF SEASONING PRIOR TO DRIVING

solid rock. A later article of this series will treat of the caisson foundation.

The Pile Foundation.

THE pile foundation can be used to meet a wide variety of conditions. Prior to 1896 practically all such foundations employed wood piles. Since that time concrete piles have been extensively developed and possess many advantageous features.

Wood Piles.—The wood pile may only be used in locations where water is constantly present, otherwise rot will set in. The tops should be cut off below the permanent water level and the piles capped with a concrete mat or ranging timbers. Wood piles, if constantly wet, will remain in excellent condition for a great length of time. Pieces of piling driven by the Romans in some of the Swiss lakes have been found in a perfect state of preservation. With respect to wharves and other water front structures located in waters infected by teredo and similar marine borers some form of effective protection must be provided.

The load which a wood pile will support is determined by the commonly accepted formula:

$$L = \frac{2\,Wh}{p+1}$$ where a drop hammer is used,

and $$L = \frac{2\,Wh}{p+0.1}$$ where a steam hammer is used

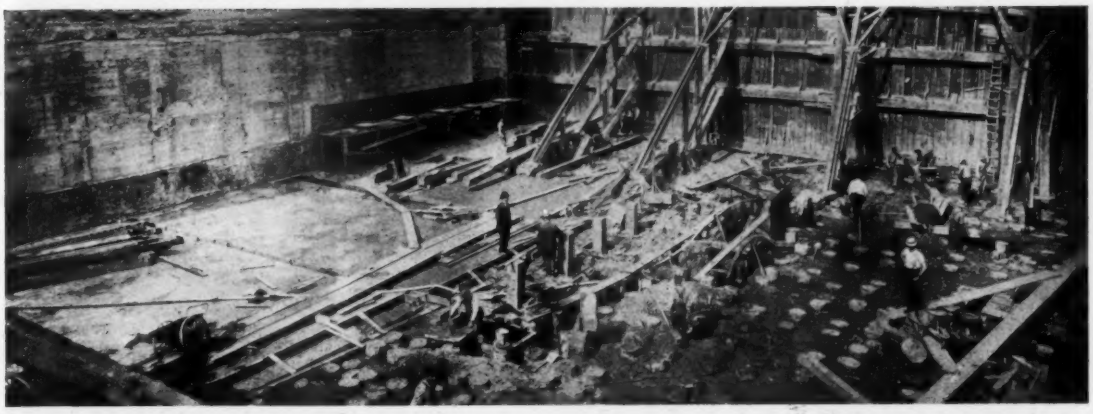
in which L = the safe sustaining power of the pile in tons; W = the weight of the hammer in tons.
h = height of fall in feet of hammer.
p = the average penetration of the pile in inches under the last five blows.

PILE DRIVING IN PROGRESS FOR THE L. C. SMITH BUILDING, SEATTLE, WASH.

1,281 Raymond concrete piles were driven on this job, having an average length of 20.7 feet and loaded to 30 tons each

When driven to practical refusal, good engineering practice limits the load on a wood pile to from 20 to 25 tons. Such piles should be at least 6 in. in diameter at the point and from 10 in. to 12 in. at the butt, depending on the length. They should not be driven closer on centers than twice their diameter at the butt. It will be seen that the conditions under which wood piles may be used are somewhat limited.

The Concrete Pile.—Concrete piles may be used over a wide range of conditions. They may be designed to support heavy loads; their permanency is not dependent on either the presence or absence of



PILE DRIVING COMPLETED. CONCRETE MAT BEING INSTALLED. L. C. SMITH BUILDING

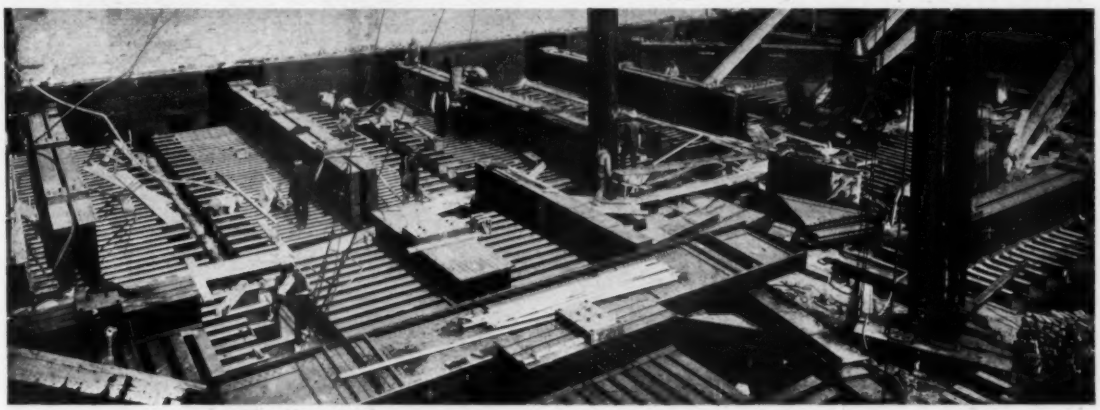
water, and since their tops are not determined by any water level, the footings may be placed at that level which will necessitate a minimum of excavation.

Concrete piles have been developed along two distinct lines, the pre-cast and the cast in place pile.

The Pre-Cast Pile.—It was but natural that the type of concrete pile first produced should follow along the lines of the wood pile. These were of the cast in place type, and were reinforced with steel. Some were made tapered and others of uniform cross-section throughout. Both longitudinal and circumferential reinforcement is generally used. Originally the driving of such a pile presented several difficulties, which have now been largely overcome.

To facilitate driving and prevent damage to the concrete a cast iron or steel driving point is provided at the lower end of the pile. Additional reinforcing is sometimes used at the head to prevent shattering. The inability of such piles successfully to withstand repeated direct heavy blows has in part been surmounted by the use of protecting devices designed to resist or cushion the blows. This has a distinct disadvantage, in that considerable energy is thereby lost.

A method used advantageously in driving the precast concrete pile is jettying, that is, displacing the material in front of the pile point by a water jet. This is of especial assistance where piles are being driven through sand or gravel. Many styles of precast piles have been patented, the patentable features usually relating to some particular feature of the design or method of driving. For instance, the Cummings pile has a special feature in the reinforcement at the head of the pile; the Bignell pile makes use of a double jetting system in driving; the Giant pile (some tests on which were described in the September 1st issue of THE AMERICAN ARCHITECT) is driven by two steel channel members extending to the metal driving point, these taking the direct force of the hammer and preventing any direct blows on the concrete shaft. Precast piles are usually made square, hexagonal or octagonal in cross section.



PLACING STEEL GRILLAGES—L. C. SMITH BUILDING

THE L. C. SMITH BUILDING, SEATTLE, WASH.
GAGGIN & GAGGIN, *ARCHITECTS*
This building, 40 stories to top of tower, is the tallest structure supported by a pile foundation

When square the corners are chamfered to avoid sharp arises. Such a pile driven to rock may be figured as a reinforced concrete column. When not driven to rock its safe load must be computed as for a friction pile.

The sizes of such piles range from 12 in. to 24 in. in diameter, and the length is usually within 40 ft., although longer piles have been driven in many instances. Loads as high as 100 tons per pile have been safely carried.

The New York Building Code provides:

Concrete piles moulded and cured before driving shall not be provided with more than 4 per cent. of longitudinal reinforcement. The diameter or lateral dimension of such a pile shall not be less than 8 inches at the foot and shall not average less than 12 inches in the length of the pile. The length shall not exceed twenty times the average diameter when the pile is driven to rock nor forty times the average diameter in any case. When driven to rock the allowable load on any such pile shall not exceed 500 lbs. per square inch on the concrete at the average cross-section and 6,000 lbs. per square inch on the longitudinal reinforcement. If driven to rock, the foot shall be provided with a metal shoe.

On this basis a pile 16 in. square, driven to rock could not exceed 26.7 ft. in length and the maximum load which it could safely sustain would be 89 tons, computed as follows:

Concrete 16 x 16 = 256 sq. in. less 8 sq. in. for chamfer = 248 x 500 =	124,000 lb.
Steel 9 — 1 in. sq. rods = 9 x 6000 =	54,000
Total safe load.....	178,000

In the Halifax Terminal Pier, constructed a number of years ago, pre-cast concrete piles were used, these being 24 in. sq. and 77 ft. long. They are safely supporting a load of 100 tons each.

As previously stated, when concrete piles are not driven to rock, they must be figured as friction piles. It has been suggested that, as the pre-cast pile itself is of considerable weight, the formulae usually applied (known as the *Engineering News* formula) be modified to allow for this factor, and the following modification has been offered:

For piles driven by drop hammer $L = \dfrac{2\,Wh}{p\left(1+\frac{w}{W}\right)}$

For piles driven by steam hammer $L = \dfrac{2\,Wh}{p\left(1+\frac{.1w}{W}\right)}$

In which w = the weight of the pile, all other factors being as previously given.

The Cast in Place Pile.—This type of concrete pile has developed several variations. The various features of the several piles can best be illustrated by a description of some of these piles, their formation and the method of driving.

GROUP OF RAYMOND CONCRETE PILES READY FOR CONCRETE CAP
Note the spirally reinforced steel shell, which remains in the ground

The Raymond Pile employes a tapered steel shell constructed of corrugated sheet metal, 8 in. in diameter at the small end, and spirally reinforced by steel wire, the shell forming a permanent mold for the concrete. This is fitted over a collapsible steel mandrel or core, which is driven until the required penetration is reached. The pile core is then collapsed and withdrawn from the shell, which after inspection is filled with concrete. The mandrel tapers from 8 in. at the point to 20 in. at a point 30 ft. from the point. The steel shell forms a permanent mold, being left in place, and insures the pile against distoring with a stream of water under pressure. When the tube has been cleaned out it is filled with 1:2:4 concrete.

Formerly interior longitudinal reinforcement was used, but in some cases this had been carried to the extreme. The writer recalls some piles of this type approximately 30 ft. long, each reinforced with 8 heavy rods. After placement these tended to interlace and prevented the complete filling of the tube by the concrete. If it is desired to use longitudinal reinforcement, four rods, not over 1 in. square, is the maximum that should be used in a 12-in. tube. This

A FOUNDATION IN WHICH HERCULES TUBULAR PILES, DRIVEN TO ROCK, WERE USED
That part of the steel tube which projects above the specified level is cut off by the use of the oxy-acetylene burner

tion while the concrete is in a semi-plastic state. This type of pile has been used extensively and has given excellent service.

The Tubular Pile.—Piles of this type are formed by driving a steel tube, usually ⅜ in. thick, and from 10 in. to 16 in. in diameter. Such a tube possesses sufficient strength to resist hard driving without deformation. This type of pile is generally driven to rock, although sometimes terminating at hardpan. To obtain the full value of strength the pile must be driven to hard rock, otherwise it is not economical.

After the steel tube has been driven to a solid bearing the interior is excavated. This may be accomplished by blowing out with compressed air, which method has been found most effective, or by wash- type of pile has been extensively used in New York City. The New York code, although formerly permitting interior reinforcement, now prohibits it. As bearing on the tubular pile this code states:

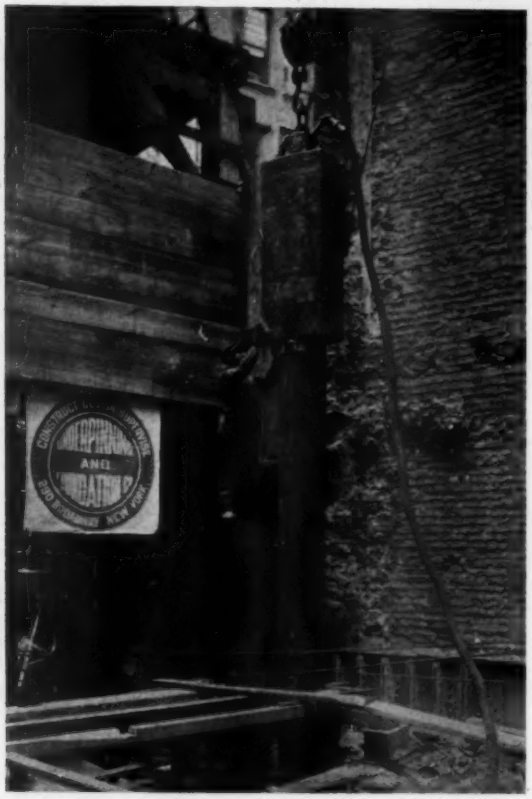
> Concrete filled steel tubes. For piles consisting of steel tubes filled with concrete, the tubes shall have a diameter of 9 inches or more and a thickness of not less than 5/16 of an inch. The ends of each tube shall oe faced perpendicular to its axis. Splices shall be of an approved design and not more than one splice shall be used in the total length of the pile. The length of any such pile shall not exceed forty times the inside diameter of the tube. Such piles shall be driven to a full bearing on rock. The allowable load on any such pile shall not exceed 500 lbs. per square inch on the concrete and 7,500 lbs. per square inch on the steel, provided that in computing the effective area of the

steel the outer 1/16 inch of thickness shall be deducted from the thickness of the tube. No interior steel reinforcement shall be used.

Tubular piles will carry loads of from 60 to over 100 tons each.

In one type of pile using a heavy steel shell, a metal point is used, thus preventing the tube from filling up during driving. This feature, however, does not permit as full a bearing on the rock.

Piles Without Permanent Mold.—In this class are several piles, among which might be mentioned the Simplex and the Pedestal piles.



DRIVING TUBULAR PILES CLOSE TO AN EXISTING WALL BY STEAM HAMMER

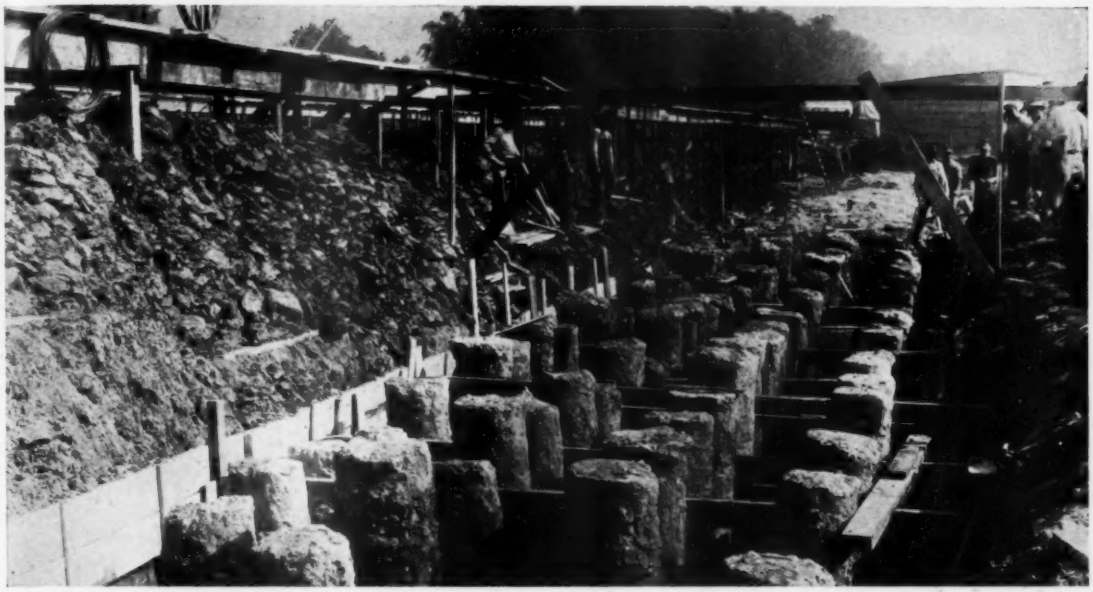
Wood frames and wedges are used to keep piles plumb during driving

In driving the Simplex pile a conical cast iron point is fitted loosely to the lower end of a 16-in. diameter, ¾-in. thick, hollow, cylindrical steel tube or form, and driven to suitable bearing. When the required depth is reached the form is filled with a wet mix of concrete to the desired level by means of drop bottom buckets. The tubular steel form is then pulled out, leaving the point permanently in the ground. Due to the method of formation a soupy mix is made necessary to prevent the concrete arching against the sides of the tube when this is being withdrawn.

GROUP OF TUBULAR PILES PARTIALLY EXPOSED

The Pedestal pile is so driven as to provide a cylindrical shaft 16 in. in diameter with a bulb or enlarged base formed at the lower end from which it takes its name. The apparatus used in driving this pile consists of a cylindrical steel casing and a core (or rammer) which fits inside the casing. This apparatus is driven into the ground to the required depth. The core is then removed and a charge of concrete dropped to the bottom of the casing. With the core as a rammer this concrete is forced out against the

CAST STEEL SLEEVE USED TO SPLICE SECTIONS OF HERCULES TUBULAR PILES



GROUP OF PEDESTAL PILES FOR THE WILLYS-OVERLAND COMPANY'S PLANT AT TOLEDO, OHIO
Earth around tops of piles excavated and forms being placed for concrete cap

soil at the bottom of the casing, and this operation of charging and ramming is continued until a bulb or pedestal of suitable size is formed. After this the casing is filled with a stiff mix concrete and pulled slowly and evenly out of the ground, the core resting on the concrete during this process, leaving in place a concrete pile of the size and shape mentioned above. Since the weight of both core and hammer (approximately 5 tons) rests on the concrete while the casing is being withdrawn, the concrete within the mold is forced against the surrounding earth as the casing is pulled out.

It has been conclusively shown that certain types of soil will transmit a pressure laterally for some distance from the point of disturbance. Due to this fact, piles not incorporating a substantial permanent mold, if driven in such soils, are subject to a lateral pressure induced in the soil during the driving of subsequent piles. Unless this fact is realized and provided against, lateral distortion may result. Certain companies driving this type of pile by developing improved methods of formation have apparently overcome previous defects, and it would seem are now able to produce good piles under various soil conditions.

Another pile, embodying some of the features of several of those previously described, is controlled by the Concrete Pile and Foundation Company. So far as the writer knows no installations have yet been made, and both its practicability and economy remain to be demonstrated. The method of driving is described by its inventor as follows:

A ⅞-in. steel shell, 18 in. wide at the top, tapering to 8 in. at the point, split into three or more parts longitudinally, with one part acting as a "key wedge" is used. At the point is a conical driving nose, into which fits the lower end of the steel shell. At the top is placed a driving block to receive the blows of the hammer. When the driving cap and nose point are in position, and during the driving, the split sections of the shell are held tightly together. After driving a tapered pile is formed by filling the shell with concrete. When this has set sufficiently the

TWO PEDESTAL PILES, EXCAVATED FOR INSPECTION

"key wedge" is first withdrawn, after which the remaining sections are also withdrawn. It would seem that the space left by the withdrawal of the shell after the concrete had set would reduce skin friction.

It is further stated that when desirable to place arms or knobs extending around the pile, either in rows or staggered, a sheet iron shell of No. 16 gauge sheet iron, with large perforations, about 6 in. in diameter, either triangular or of some other shape, is placed outside the heavy steel shell and is driven

APPARATUS USED IN DRIVING PEDESTAL PILES

into the earth with the heavy shell. When the desired penetration has been reached, the heavy shell is withdrawn, leaving the driving nose and the perforated sheet iron shell in the earth. Concrete is then introduced and tamped, forcing the concrete out through the perforations into the surrounding earth, thereby forming knobs, as well as impacting the earth around the pile, and increasing the skin friction.

The several types of piles described in this article are shown in the accompanying illustrations.

Stimulating Building

THE Bishopric Manufacturing Company, makers of stucco board and sheathing, used extensively in home building, not long ago issued to the trade a revised price list, quoting reductions over previous prices. An accompanying letter states:

> While there has been some reduction in price of the wood strips used in the manufacture of Bishopric Board, there has been a continual advance in price of other materials used in these products; further, our labor costs are still on a high level, so that conditions really do not warrant this price reduction. We are making same with the hope that it may help you to some extent in stimulating your sales.

An excellent method. No factor will so stimulate building as a reduction in costs. The architect is realizing this to an increasing degree, as estimates received on contemplated projects halt their construction until more propitious times. If every manufacturer would seek to stimulate business in this manner, a solution of the present critical building situation would automatically appear.

Mechanical Engineers Organize Materials Handling Section

FOUR hundred members of The American Society of Mechanical Engineers have organized themselves into a Professional Section on Materials Handling and will provide primarily a common channel of intercourse between all the technical and industrial organizations cooperating in the solution of engineering problems connected with the handling and distribution of materials and products.

Probably the greatest economic need of civilization today is the devising of means and a more intelligent application of proper and coordinated methods whereby materials of one kind or another may be handled more swiftly and to better advantage.

Industrial and railroad congestion has been almost intolerable and with these continued conditions have come mounting costs until better, more efficient and more adequate systems must come into being if the cost differential that is now being reflected in the soaring prices of all goods is to be modified.

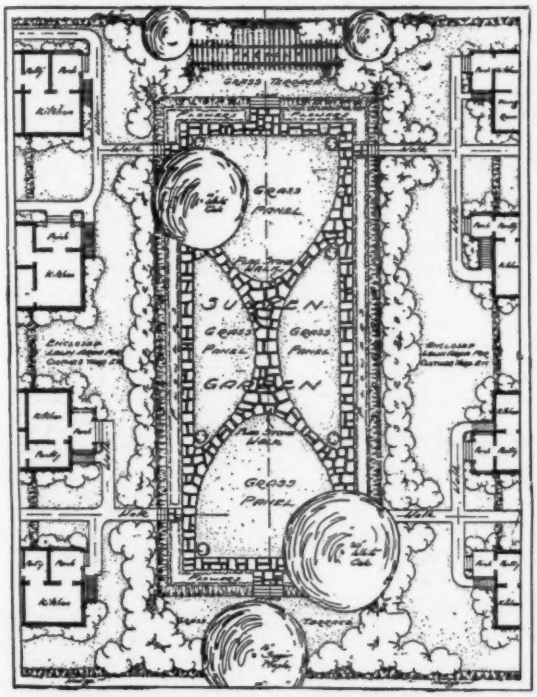
The burden of this necessity made it imperative that a professional section composed of those whose interests and whose expert knowledge brings this problem close to them, should assume this work as its obligation to the technical fraternity and its contribution toward the solution of a national problem.

This section will aim to be a bureau of information —complete in its scope, specific in its knowledge of the physical and economic conditions and unbiased in its conclusions. This will be done by having special meetings on particular subjects, meetings jointly with other sections, or other organizations, by taking part in all local and national problems.

Making the Most of the Back Yard

(*Continued from page 575*)

obliged to build his garage upon the property itself, thereby cutting off a considerable portion of the available lot space of the back yard. The owner of the small suburban lot in a closely built up community needs to devote only a small portion of his back yard to the drying of clothes, while the remainder of the yard, not large enough for a garden and consequently in reality often a waste space used as a dumping ground for miscellaneous portions of the family belongings, is frequently unsightly and generally poor in character.



PROPOSED DEVELOPMENT OF A COMMUNITY BACK YARD GARDEN—THE INTERIOR COURT AREA OF A SUBURBAN BLOCK

The accompanying illustration in the *American City* shows one possible and entirely practical means of community utilization of this waste area. Experiments of this character have been tried out in several of the larger and more closely built up cities of this country. Such a development affords sufficient space for the drying of laundry and other necessary back-door activities, gives perfect seclusion from the street, and at the same time privacy from the back doors of the houses themselves, by means of the shrubbery border which completely surrounds the garden area and from the fact that this area is depressed slightly below the level of the lots themselves.

A garden of this character will produce sufficient cut flowers for the tables of the neighboring families and has sufficient flowering area to afford a bright and cheerful appearance throughout the entire season. It affords a play space for the children in the morning and afternoon and a sheltered promenade for the older members of the family after work is over in the evening, or an attractive setting for the holding of outdoor afternoon card parties and little informal garden affairs in the evening. The extensive use of the stone path means dry footing even after the hardest rain and also a minimum of attention from the family lawn mower.

Such treatment is simple in character, easy of construction, and with slight modifications adapts itself well to the usual topography of city lots. The cost of flowers, shrubbery, materials for the walk, etc., will total less in the expense column than would the cost of the individual landscape treatment of each lot as a separate unit. The throwing of all waste space into one available community area makes the most out of every inch of the land involved. The plan in its entirety may not be applicable to all city blocks for which it may be used, but it is closely modeled after several developments which have actually been constructed; and in the majority of instances it can be quite closely followed by slight alterations in the shape or extent of the design.

Such utilization of the back-yard area will go a long way toward stimulating a close community interest; it will afford a place of recreation and privacy for young and old, especially in those portions of the city where a public park can be reached only by a long hot walk or a tedious ride in a crowded trolley car after the day's work.

Current News

Happenings and Comments in the Field of Architecture and the Allied Arts

Lehigh Valley Architects Affiliate With A. I. A.

At a special meeting and dinner of the Lehigh Valley Society of Architecture, held in the Hotel Allen, Allentown, Pa., the society adopted a resolution to affiliate with the architectural society of Reading and to form an Eastern Pennsylvania chapter of the A. I. A.

The business session, presided over by L. S. Jacoby, president, followed a dinner. Mr. Jacoby introduced M. I. Kast, Harrisburg, president of the Pennsylvania State A. I. A. and secretary of the State board for examining architects, as the speaker.

Iowa Chapter Discuss Housing Problems

Housing was the central theme at the eighteenth annual convention of the Iowa Chapter of the American Institute of Architects, which was held at Waterloo, October 14 and 15. The entire morning session on Friday was devoted to a discussion of this subject, with addresses as follows: "The Minnesota Small House Bureau," Edwin H. Hewitt; "Housing Development for the Government and for Cleveland, O.," Seth J. Temple; "Town Planning and Housing at Newton, Ia., and Spirit Lake, Ia.," Harold G. Sprague. There followed a discussion on the practical working of the Iowa State Housing Law.

A paper on "Architectural Photography" was read by Seth J. Temple. In the course of the convention, an address was made by Allen Holmes Kimball, chapter president; a lecture with moving pictures was conducted by the Indiana Limestone Association.

Utah Architects Asked to Submit Plans for War Monument

Utah architects are invited to submit plans for the proposed state war memorial by a resolution passed by the state memorial committee at a meeting held in the office of the county commission Thursday.

The form of the memorial and the site on which it is to be erected have not been decided upon by the committee. It was stated today that all available plans for memorials should be in the hands of the committee before the decision is made.

An auditorium, suitable as quarters for the American Legion, Spanish War Veterans, G. A. R., Mormon Battalion and similar patriotic organizations, is understood to be favored by the majority of the committee. Four sites are said to be in prospect.

O. J. Grimes, secretary, was instructed to inform architects of the state that plans should be submitted at an early date, as it is desired to get the committee's recommendations before the State Legislature at its next session.

N. Y. State Association of Architects

The New York State Association of Architects will meet in New York City on November 11th, 12th, and 13th, to discuss with representatives of the building trades, manufacturers of materials, and labor, the subject:

"What is the matter with the building industry?"

The point of view of the General Contractor, the Sub-Contractor, Building Superintendent, and Labor will be presented at the meetings on November 12th by:

Mr. Louis Comstock, of L. K. Comstock & Co.

Mr. W. G. Luce of Hegeman-Harris Company.

Mr. Hugh Frayne, Organizer for the American Federation of Labor.

Mr. Ronald Taylor, President of the Building Trades Employers' Association.

Mr. Robert Glenn of Todd, Irons & Robertson, Inc.

Mr. J. Riley Gordon, President of the New York Society of Architects and Mr. William P. Bannister representing the Brooklyn Chapter of the American Institute of Architects will discuss the subject from the point of view of the Architect.

Mr. Burt L. Fenner, President of the New York Chapter of the American Institute of Architects will lead the discussion on Housing.

Mr. Allen E. Beals of Low's Reports will speak on Building Materials, Supply and Prices.

Mr. Ordway Tead of the Bureau of Industrial Research will speak on "What is Being Done in England."

Members of the New York State Association are invited as guests of the New York Society of Architects at an informal dinner on Thursday evening, November 11th, at 7 o'clock.

Mr. Robert Glenn, Superintendent in charge of the construction of the Cunard Building, now in course of erection, has invited those who intend to be present at the meetings to visit this building on Saturday morning, November 13th.

The meetings on Friday, November 12th, will take place at the Fine Arts Building, 215 West 57th street, at 10.30 A. M. and 2.30 P. M.

XUM

Ask Funds to Preserve Poe Cottage

An appeal for funds to preserve and maintain the Edgar Allan Poe cottage in Fordham has been issued by Mrs. Charles D. Dickey, chairman of the Poe Cottage Committee of the Bronx Society of Arts and History. Mrs. Dickey said that the cottage, which is located in the little city park on Kingsbridge Road and Grand Concourse, was in need of repair and several thousand dollars must be raised at once to yield an adequate yearly income for maintenance. The Columbia Trust Company branch at Third Avenue and East 184th Street has been appointed to receive contributions.

No Use for Door Keys in Russia

Door keys are considered unnecessary in the Bolshevik scheme of life in Russia. Only privileged persons are supposed to possess them.

When the Associated Press correspondent, who recently crossed Russia, asked for a doorkey in one of the nationalized hotels at Omsk he was informed by the hotel "commissar," formerly the owner, that under the Red regime doors are not supposed to be bolted.

An appeal to the Omsk Bolshevik commandant resulted in the American correspondent obtaining an official document granting him a key and the privilege of locking the door of his room.

Wants Postal Savings Funds to Aid Home Builders

Postal savings deposits totaling $175,000,000 would be turned into a vast building loan fund to relieve the Nation-wide housing shortage under a bill to be introduced at the next session of Congress by Representative M. Clyde Kelly, of Pennsylvania.

Kelly would have the money, and loans to be made with it, administered under the direction of a group of depositors in each community.

Kelly is one of a group of Representatives and Senators now planning to introduce bills dealing with the housing shortage at the next session of Congress.

Chicago's $5,000,000 Dwelling Fund Grows to $7,500,000

Under the plan being worked out by the Chicago Trust Co., to distribute in Chicago territory the $5,000,000 offered at 6½ per cent. by the Metropolitan Life Insurance Co. for the building of homes, the fund has grown to $7,500,000.

As explained to the Chicago Real Estate Board Housing Committee by Hiram S. Cody of the Real Estate Loan Department of the bank, the insurance company offers only to handle first mortgages up to 50 per cent. of the cost of the new dwellings. A special securities corporation is being worked out by the Chicago Trust Co. to handle second mortgages, supplementing the first, and up to an additional 25 per cent. of the cost of lot and building. The seconds will probably be at 7 per cent.

In a typical case a home hunter owns a $2,000 lot. He wants to put up an $8,000 house. On this he can borrow three-fourths of the total, or $7,500, leaving him to raise $500, plus commissions on the loans, estimated at $375, and incidental costs of settling in his new home.

Thames River to Have New Bridge

The city of London is now resuming preparations, interrupted in 1914, for the construction of what will be known as St. Paul's Bridge. Spanning the Thames River near St. Paul's Cathedral, the bridge will relieve the present congestion of traffic by providing a new link between the north and south sections of the crowded city. Cross-country motor-truck traffic will benefit in particular, as the bridge will connect directly the Great North Road and the highway to Dover, on the Channel, 65 miles distant. The structure is to be built of stone, and in design will resemble the graceful bridges of Paris.

Sportsman's Stable Becomes Restaurant

Among the unusual sights in New York City is the restaurant, located not far from Fortieth Street and Broadway, which was once a horse stable. It was a stable of palatial sort, however, built by a world-famous sportsman to house his string of race horses. So it is in stalls marked "Hermes," "Irish Lad," and "Gold Heels" that the diner now is served. On the walls hang pictures of racing and hunting celebrities and incidents; illumination is provided by antique lamps. Altogether, the atmosphere of the strange eating place is original and quite authentic, the word "atmosphere" being used figuratively, of course.

Plan to Save Fifth Avenue Elms

Unusual methods to save Fifth Avenue's elm trees, bordering Central Park, have been taken by Park Commissioner Francis D. Gallatin, New York, under the direction of J. S. Kaplan, the department forester. Nearly one-half of the big trees have been lost within the last few years because of lack of fertilizer. The hardness of the earth about the roots and the continuous pedestrian traffic have made the fertilization of the trees a difficult problem.

The method which is now being tried is the digging of trenches at right angles to the avenue and midway between the trees. The trenches are three feet wide

and two feet deep. They are filled with commercial fertilizer, which is covered with water. After the water has soaked in the trenches are covered. The feeding roots of the trees on each side of the trench reach the fertilizer.

Trenches were tried successfully last year with the beeches, birches and maples in the park, but in an entirely different way. At that time circular trenches were dug all around the trees, a method which is impossible on Fifth Avenue.

Hilton Gets Its Brick

A shortage of buildings and of brick existed in Hilton, California. It was decided to raze an old chimney which contained eight hundred and fifty tons of brick—enough to relieve the brick shortage. A big notch was cut into the chimney's base. As the bricks were removed, supporting timbers were put in. Slowly at first, then with increased speed, the big pile of brick moved earthward. There was a great crash. When the timbers were all in place they were covered with gasoline and set on fire. The men then gathered up their tools and drew away to watch the big crash from a safe distance. As the fire burned the timbers became weakened; they groaned under the terriffic weight, and—down she came!

Chimney Two Miles Long

The tallest chimney in the world is in Wales, and is over two miles in length, and has a further distinction in that it has a brook running through it. According to the Detroit *News*, it was built by a smelting company after the neighbors for miles around the plant had complained that unless something was done to alter the drift of copper smoke that destroyed vegetation and rotted the hoofs of farm animals, they would take the plant away brick by brick.

A famous engineer was called in, and after inspection of the plant began a chimney that extended from the roof of the plant up a mountain side just back of the works. The chimney, in addition to crawling the two miles up the mountain, extends 100 feet up in the air. The brook was allowed to flow almost the entire length of the chimney, as it was found the running water would condense the smoke to a great extent. Once a year the chimney is swept, and a ton of precipitated copper is reclaimed. The tip of the smoking chimney can be seen for forty or fifty miles on a clear day.

An Apartment Building in New York

In an apartment building of the most expensive type on Fifth Avenue the interior decorations are done entirely by the lessees. Under this agreement they are privileged to us any kind of woods. One of the lessees has gone so far as to have doors and panels of an old European castle brought over to harmonize with some mediaeval period furniture.

Probably the most unusual thing about this building is that the minimum lease is for ten years. All the leases were signed before the building was completed.

Convention Hall Had Unusual Equipment

Arc lights of an unusual type illuminted the Coliseum during the Republican National Convention, at Chicago, a few months ago, and by their brilliance made possible the taking of motion pictures. This had never been done at a previous convention. Each of the lights, as described in *Popular Mechanics,* was rated at 1,900,000 cp., and consisted of an arc backed bq a silvered parabolic reflector. In front of each was placed a plate of ground glass to serve as a diffuser. Another item in the furnishing of the hall were the three loud-speaking telephones with rectangular amplifying horns, suspended above the rostrum to carry the speaker's voice to the remotest corners of the gallery. The receiver at the small end of each of the great wooden megaphones was vibrated by a transmitter mounted in front of the platform.

Museum for War Relics

The collection of relics of the great war which the war department is assembling has reached such proportions that Congress will probably be asked to provide funds for the erection of a new museum building when it convenes in December. The latest curio to arrive is the Order of Battle map used by Gen. Pershing in directing the movements of the American forces in France.

This map, which is 8x10 feet in size, together with the furniture, floor and walls of the room in which it hung at American headquarters at Chaumont, was transferred to the National Museum here at the request of the general. While at Chaumont the map, when not in use, was concealed by a sliding section of wall, and this has been installed in the same manner at the museum.

The map was kept right up to the minute until the signing of the armistice, and vividly depicts the exact situation of not only our own troops, but those of our allies and also the enemy. The strength and location of all divisions is shown; the correct battle lines, the names of the commanding officers and locations of headquarters and army boundaries. Detailed information is also set forth, including the percentage of fresh and tired troops in the various American sectors and the length of time various organizations have been in line or reserve.

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The war collection is now crowded into the first floor of the new National Museum and some of it has overflowed into the old building. In some instances artillery pieces are out in the open waiting for a suitable protecting cover.

The airplane exhibit is especially interesting, as it includes practically all types used by the allies and the enemy and also an elaborate display of airplane motors. In addition to the world aviation section the museum contains the original Langley and Wright models.

Architects in New Nation-Wide Housing Contest

A nation-wide competition for four, five and six-room house designs, with $15,000 in prizes, has been proposed. The winning designs will be exhibited at the Own Your Home Exposition next spring at the Coliseum in Chicago. The thirty-two prize designs will be selected by a jury of competent architects from various parts of the country and will be printed in book form and sold at a nominal price to cover cost of production.

There will be an equal number of brick, wood, stucco, and concrete block houses. Complete plans and specifications, with all necessary architectural services, will be sold for a nominal sum, not to exceed $25. This is along the lines of the project announced recently by the Illinois Society of Architects.

Henry K. Holsman, president of the Illinois Chapter of the American Institute of Architects, has been selected by the Illinois chapter and the Illinois Society of Architects to represent the architects at the Own Your Home Exposition. He has appointed a committee of several local architects, who have passed on the design of the exposition, and who will pass on the architectural and artistic points of the several exhibits.

Personals

Messrs. Goodwin, Bullard & Woollsey, 4 East 49th st., have dissolved partnership. Messrs. Goodwin & Woollsey will continue to practice at the same address, and Mr. Bullard has opened offices for individual practice at 15 West 38th st.

Ernest H. Schmidt, of Glencoe, Minn., has associated himself with Albert Schippel in the practice of architecture at Mankato, Minn. The new firm is to be known as Schippel & Schmidt. They will be pleased to receive new catalogs and samples of materials.

New York Society Meets

The monthly meeting of the New York Society of Architects took place on Tuesday evening, the 19th ult., at Offer's Restaurant, West 38th Street, Manhattan. The meeting was preceded by a dinner attended by about fifty members of the Society. Among the guests were: Superintendent Kleinert of the Brooklyn Bureau of Buildings, Mr. Wm. Parfitt and others.

The first speaker called upon by President Gordon was Mr. Kleinert, who in the course of a brief address expressed his interest in the Society's work and the pleasure he always felt at being present at its meetings. The speaker went on to say that under present conditions no improvements in new construction of houses could be looked for. People are prone to expect more than is possible, but under the present law as interpreted property rights are taken away and capital cannot be expected to be invested until a law is passed for its protection. Mr. Kleinert advised co-operation to secure the passage of a bill of a remedial nature.

Vice-president Loth, in an interesting historical resumé, pointed out that the experience through which the country is now passing has had its parallel in former crises, in which a "slump" has been followed by a corresponding revival. As instances we had the Green-back craze, the Silver craze, and finally the great War came with all its disrupting consequences. This will surely be followed by a readjustment and revival. Such conditions are due to our imperfect civilization. Men will finally become educated to a higher conception of life and duty.

The New York State Association of Architects is to have a convention in November, which Mr. Loth said every architect in the State should attend. The State Society is putting up a fight for the registration of architects as a protective measure for the whole profession. According to Mr. Loth, the "tight wad architects" reap the fruits of the labors of the self-sacrificing practitioners.

Mr. Hugh Tallant, one of the Society's recently returned members from the war regions of France, where he has been doing duty in the A. E. F. Engineering Corps, was the next speaker. After reminding the meeting of his former lectures to the Society on the science of acoustics, Mr. Tallant remarked that the problem to be solved in this regard on the scene of his recent experience was "how not to hear," the chief requirement being a liberal supply of cotton wool for the ears. Mr. Tallant referred to several distinguishing characteristics of the French in their treatment of the American Army. First, their generosity and impressionable spirit. There never was an army treated with such indulgence. One-quarter of the regular railroad rates

was charged, and candy almost without limit provided to officers and men. Second, the interest shown in the individual soldier, extending even to his family connections at home. Also the wonderful constancy of the French. Even when under bombardment, the Big Bertha gun firing its discharges every half hour in the City of Paris, the people were free from panic, attending theatres and going about their business as usual. The French also showed a remarkable capacity for assimilation.

General Pershing, on coming to review Mr. Tallant's company, met an apologetic reference to the soldier architect by the remark that they were "a d——d fine looking body of men."

The speaking program of the evening was followed by a lecture on the limestone industry by Mr. McGrath, of the Indiana Lime Stone Manufacturing Association.

The lecture was illustrated with motion pictures, showing every process, from the stripping of the rock up to the time when it is set up as a living monument to the architect. The address and exhibition met with due appreciation from all present.

The meeting, which was one of the most enjoyable in the history of the organization was brought to a close after the election of several new members and nomination of applicants for membership.

Weekly Review of the Construction Field

With Reports of Special Correspondents in Prominent Regional Centers

IN a report recently issued by the National Association of Corporation Training, it is stated that 250 industrial plants in this country have some sort of shop representation. A case in point is that of Procter & Gamble Co. which has just elected three employees, one from each of its plants, to its Board of Directors. These three directors were chosen by the workers themselves and this instance is cited in the report as the first industrial organization to have employee directors.

The steadily increasing demands on the part of employees of industrial institutions for a larger measure of authority in the management of business involves a determination of the degree of responsibility which must be accepted by these employees. Any development which tends to lessen production or deprive capital, management or employees of any of the rights which have been decreed by public opinion as just and fair must be discarded in advance. Any attempt to formulate new philosophies and new systems to be utilized in the movement more fully to democratize industry must square with the most intelligent judgment of the public.

The Secretary of the Treasury has told to the convention of bankers recently held in Washington the plain truth about our falling prices. It is equally necessary that these truths should be brought home to managers of industries and business, to those who work in these fields and in fact to the whole public. We shall only arrive at a comprehensive knowledge when all of us understand them. It seems certain that inflation in prices of abundant commodities can not be kept from falling toward natural levels and to quote a recent editorial from the New York *Herald*, discussing this subject, "we might as well try to make the Niagara waters rush up the falls instead of down as to try to maintain war prices for prodigious stores of goods when the consuming public will not and can not pay such prices."

Assuming the premise, based on the foregoing, to be correct that there will occur a falling market in the price of building material the question might be asked what may be done to start building. In answering this question, the Monthly Bulletin of the Illinois Society of Architects summarizes the expressed opinion in the middle west as follows:

Considering the present shortage in construction estimated at three and one-half billion dollars in the United States, it will require the best efforts of the entire construction industry working at maximum capacity for ten years to fill this gap and get back to normal.

No material reduction in either material or labor costs may be hoped for for some time.

Building costs will be slightly lowered just as soon as the transportation systems are able to function normally, for then building materials may be secured as required and the time necessary for the completion of a structure materially shortened as compared to the time required in the immediate past. This shortening of the time of construction will reduce the amount of carrying charges. An increased output of the building mechanics which may be expected due to a scarcity of work and the consequent competi-

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tion for jobs will also in a small measure reduce building costs.

Money is still, and for some years, will be the controlling factor. Money will be invested in building securities in direct ratio as the return on the sums invested bears to the return of moneys invested in bonds and other securities.

A vast amount of construction for housing is imperatively needed. Private capital will not invest until rent returns are advanced to yet higher levels, or until real estate securities are made more attractive in other ways.

There are two methods suggested to make real estate securities more attractive to investors.

a. Repeal the income tax.

b. Exempt from all taxation for a period of years, money invested in buildings.

The alternate is for the nation, state or municipality to raise money by taxation or bond issues to construct needed housing, letting the financial loss of such a proceeding be borne by the entire community.

THE conditions as affecting railroad transportation appear to be getting better and it is evident that the railroad managers are bending every energy to relieve a situation which at one time was so serious as to menace the prompt resumption of building operations even if all other contributing forces were removed.

In a recent letter addressed by the President of the Illinois Central Railroad Co. to a prominent architect in the middle west, he stated:

"For ten years prior to Federal control the revenues of the railroads were insufficient to provide cars and engines and development of the railroad plant to the extent necessary to meet the expansion of commerce. When Europe went to war, and later we were drawn in, the business of the country increased tremendously and, while the Government had charge of the lines, it failed to develop new equipment in proportion to development of business; furthermore, during the war the railroads were operated at their maximum capacity and everything was subordinated to getting the best possible use out of the cars, engines and the railroad plant. The natural consequence was greater rapidity in deterioration of equipment and plant and the result was inevitable; viz., when the railroads came back to their owners they were in worse condition than before, and the demand for transportation facilities was greater. During the time the Government had charge of the lines no new passenger cars were ordered. Consequently, there is a shortage which is severely felt by all the railroads, including the Illinois Central.

"I am hopeful that, under the new order of things, it will not be long before the income of the railroads will be sufficient to take care of the essential requirements of freight traffic and permit us to increase suburban passenger train service and facilities as should reasonably satisfy the desires of all. As a first step, we have included in orders placed since the first of the year for $27,000,000 of cars and engines one for 20 suburban cars, involving an investment of approximately $750,000. The manufacturers expect to commence delivery in the first quarter of next year. These cars will be of steel construction and of the most modern type for that character of service, and will afford substantial relief from existing conditions, of which you complain."

President Markham's opinion probably accurately represents the point of view of railroad executives throughout the country.

THE New England correspondent of THE AMERICAN ARCHITECT finds that in reports to the Massachusetts State Board of Industries and Labor there is shown an increase in building operations in Boston from $6,907,924 for the second quarter of the year to $7,555,890 for the quarter ended Sept. 30. But returns tabulated from 25 cities in Massachusetts, including Boston, show a drop of 16.9 per cent.

There has been little homebuilding, although it is well known that a great demand for houses exists. Sixteen communities report "normal" conditions in building, 29 below normal and two slightly below normal. From various places came the report "many unemployed"; "building slow"; "construction slowing down"; "no new projects in sight."

Industrial returns show a declining tendency in principal lines. In textile manufacturing 12 below normal; 3 slightly better than normal. Those below normal report the percentage of capacity in operation all the way from 40 to 90. Worsted and cotton manufacturers generally report "quiet" conditions. Machinery and metal establishments are reported from 20 places as normal; 13 below normal and two above; some are working half time and others with a reduction of 10 to 15 per cent. of working hours.

In the majority of architects' offices called upon, the general feeling is that confidence is slowly returning. These organizations that are usually busy report considerable work on the boards but very few contracts being signed or projects going through to completion.

Credit and transportation conditions are rapidly improving. The last mentioned is the result of reduced traffic; more efficient management and operation of equipment and the mental stimulus given by the recent increases in freight and passenger rates.

The presidential campaign this year defers exactly in the same way as it has in preceding campaigns the adjustment of certain economic questions as

there is a tendency to await the assurance of the counted ballot and not to discount what in many minds is a certain conclusion. Our correspondent in Seattle, Washington, states that on the Pacific Coast there was until mid-October a tendency to await the result of the ballot which by the time this is read will have been accomplished and the result generally known. Our correspondent from Seattle states:

IT will be necessary at this time, in arriving at an approximate of construction and market conditions on the Pacific Coast, to digest the equation of politics as of the November elections, transportation and the attitude of bankers in whose hands the welfare of this part of the country now seems to rest.

Pacific Coast bankers are firmly of the opinion that the next 60 days will be the crucial period through which the country is passing, with the further depression and unsettlement, if it occurs, to be felt first in the east. This period will, they believe, tell the story of commercial and construction recovery, the base of commodity prices and whether and at what level it will be safe to operate. Future operations may then, they assert, be proceeded with confidence.

The carriers on the coast, particularly in the cement producing centers of the North Coast, are enforcing the "system car" rule, which prohibits loading to any point off the line. This rule is causing the cement shortage which is inextricably linked with better or worse for delayed building projects on the cost. In order to get delivery of cement without an additional and prohibitive handling charge jobbers must have their warehouses located on the same railway as the cement plants. Unfortunately only a few such harmonious conditions exist. The proposed highway law now before the voters of Washington which will mean the annual consumption of 800,000 barrels of cement for six years is causing much anxiety among builders. It has been openly asserted by those in opposition to the plan that all the cement plants of the state cannot produce so much, let alone the demands for building, and the effect must be steadily advancing prices of cement. Cement manufacturers as a rule are working for the bill which will be voted on in November.

Jobbers are not unanimous in the estimate of conditions as to the supply of small sizes in galvanized pipe. The large plants which are able to take heavy tonnage claim that the supply is ample, but admit that they are trading one to another to maintain the supply. The smaller jobbers, who order 200 ton lots and upward, are a unit in the statement that there is an acute shortage. Light holdings over the territory are ascribed by the larger operators to the fact that tonnage has been running to larger or shipyard sizes, and that few have made preparation for the demand that is now pressing. On the other hand, one of the largest jobbers in the territory has had black pipe of small size galvanized in Seattle on an emergency order during the past week.

Rationing continues in small nails, but jobbers can report a slight improvement in arrivals. Eastern mills, especially those of Colorado, report that they expect to clean up back order files by January 1, although the improvement thereby will not be felt on the coast for several weeks later.

Arrivals of wire have been showing an improvement. Prices remain rigid. It is the impression of the largest operators here that there will be no fundamental change in the basic price of steel products to the end of the year because of present shortage, nor for that time until late in the spring because of the demand that will be come from all over the coast.

There is a plentiful supply, running to a surplus and multiplicity of offers, in face, fire and common brick, plaster board, roofing and lath, but plaster is scarce and the difficulty of obtaining even a ration is more acute.

The lumber interests share the opinion of the steel operators in the forecast that no improvement can be hoped for until the end of the year. Stock taking will follow the elections, and the coast kept in a state of unsettlement until February or later. Fir lumber, despite the feeling a week ago is slightly lower. Dimension sizes are $1.50 under the quotations of a week ago at the mills. Flooring 1x4 No. 2 vertical grain stock is steady at $57 to $61.50 as compared with $56 to $64 a week ago. Ceiling is steady. Drop siding is lower at $36 against $41 a week ago.

Boards and shiplap are weak. No. 1 1x8-10 inch averaged $22.50 to $25.50 against $14 to $27.50 for the preceding week, but sizes of 1x12 inch were $1 to $2 higher at $26 to $29.50. No. 1 dimension, 2x4 12-14 surfaced and edged is $19.50 to $28.50 at the mill. Small timbers are lower at $20.50 against $24.50. Timbers 32 feet and under are stronger. Shingles are stronger. One half the mills have closed down.